Final Report

Dickson Precinct Traffic and Parking Study

25 July 2012 Ref. 3002303

Project Name:	Dickson Precinct Traffic and Parking Study
Project Number:	3002303
Report for:	ESDD

PREPARATION, REVIEW AND AUTHORISATION

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Dickson Precinct Traffic and Parking Study – Final Report

For: ESDD

JULY 25, 2012

EXECUTIVE SUMMARY

A master plan for the Dickson Group Centre was developed in 2011 by ACT Planning and Land Authority (ACTPLA, now Environment and Sustainable Development Directorate (ESDD)). This master plan defines the structure of development in the Dickson precinct over the next 30 years. SMEC has been engaged to undertake an assessment of the master plan and make recommendations regarding transport, including non-motorised transport, parking and traffic, for the current situation, the short term time frame and the long term implementation of the master plan.

A number of transport studies have been conducted in Dickson recently, especially regarding parking, and these studies have been reviewed and the outcomes used where appropriate for this study.

ES.1 Existing Conditions

The following investigations into the current conditions in Dickson were undertaken:

- Examination of pedestrian and cycle network connectivity and condition
- Survey of pedestrian and cycle volumes
- Survey of parking supply and utilisation
- Survey of traffic volumes
- Micro-simulation modelling
- Intersection analysis

All surveys of demand (cyclist, pedestrian, parking and traffic) were carried out for four peak periods, namely:

- Weekday AM peak (7:00AM-9:00AM)
- Weekday PM peak (4:00PM-6:00PM)
- Weekend midday peak (11:00AM-1:00PM)
- Weekend evening peak (6:00PM-8:00PM)

A site visit was conducted to examine the provision of pedestrian and cyclist infrastructure, as well as its condition and possible safety risks. It was found that, while the provision and condition of the infrastructure tend to be good, there are a few areas that require upgrades.

The pedestrian and cyclist volumes at 24 locations across Dickson were surveyed to allow identification of areas of high demand and possible prioritising of recommendations based on volumes.

A parking supply and utilisation survey was carried out for the centre. 23 parking areas were identified and surveyed for the four peak periods. It was found that there is significant spare capacity across the centre, with utilisation peaking at 63%. However, demand during different peaks is focused on certain parking areas and the centre may benefit from better signage and pedestrian connectivity to encourage better use of car parking areas that are slightly further from the land use they are serving. Gated and publicly accessible car parks were analysed separately and it was found that 65% of the parking is publicly accessible. The publicly accessible parking had a maximum utilisation of 64%, which occurred in the weekday PM and weekend midday peak periods. It is noted that 391 parking spaces were not surveyed (329 in the Dame Pattie Menzies House structured car park and up to 62 on-street parking spaces on Antill Street).

Traffic turning volume surveys were conducted for 21 intersections across the precinct for the four peak periods. These surveys showed that traffic volumes tend to be higher on external roads, including Northbourne Avenue, Antill Street and Cowper Street, than inside the centre. These roads had significantly higher traffic volumes on weekdays than weekends. However, the traffic volumes inside the centre tended to be higher during the weekend peaks than the weekday peaks.

The hierarchy of the road network in the study area was assessed, based on the traffic volumes. It was found that most roads carried traffic volumes appropriate to their hierarchy. However, Antill Street, Cowper Street and Challis Street are currently carrying more traffic than is recommended for their respective hierarchies.

Finally, the 21 intersections were analysed for the four surveyed peaks using SIDRA Intersection. The results of this analysis showed that there are a small number of intersections currently experiencing traffic congestion and high levels of delay for vehicles travelling through them.

ES.2 Assessment of Master Plan

The master plan goals were assessed for two future scenarios:

- Short term, including the development of supermarkets on Blocks 19 and 21
- Long term where the entire master plan is assumed to be implemented

In the short term, only the parking requirements during construction of the supermarkets were assessed as the traffic impacts of the completed supermarket developments were assessed in 2011 by Brown Consulting. It was found that there was insufficient spare parking capacity to cater for the lost capacity while construction is underway if both blocks are developed at the same time. In addition, there is unlikely to be sufficient spare capacity in existing car parks to cater for the lost capacity while Block 21 is being developed, if construction cannot be staged and part of the car park kept open during construction. Indicative levels of development of the two sites were found by Brown Consulting to require replacement of the existing 326 parking spaces and provision of an additional 359 parking spaces. Any development on this site should comply with the requirements of the *ACT Parking and Vehicular Access General Code.*

In the long term, a number of recommendations were made to meet the pedestrian connectivity goals. These included new crossing points and upgrades to existing paths. Some of the goals of the master plan regarding pedestrian and cyclist facilities were addressed in the short term recommendations.

The level of detail available regarding future developments in the Dickson master plan is relatively low so a detailed parking assessment was not able to be carried out. However, indicative parking requirements were developed based on potential land use supplied by ESDD. The calculations carried out indicate that the parking demand is likely to increase to approximately 6,000 in 2031 from 2,500 in 2012. All of this parking will need to be provided inside future developments, probably as basement levels.

The potential indicative road hierarchy, based on predicted daily traffic volumes was also investigated. It was found that with the increased development in Dickson, a number of roads would be carrying substantially higher traffic volumes than is recommended for their hierarchy. These roads include:

- Cowper Street
- Challis Street
- Cape Street (including the extension)

- Badham Street
- Dickson Place

The predicted traffic volumes on these streets mean that on-street parking may not be appropriate. In addition, access and egress to and from developments may be impacted by the high volumes.

The final assessment of the long term scenarios was intersection analysis, both with and without the implementation of the master plan. The same 21 intersections that were analysed for the current situation were analysed for the long term scenarios. In addition, the new intersection related to the extension of Cape Street to Northbourne Avenue in the west and Dickson Place in the east were analysed for the master plan scenario.

It was found that there are a number of intersections that are expected to perform at Level of Service F, which indicates an unacceptable level of delay for drivers, in the long term. Many of these intersections showed similar performance in scenarios both with and without master plan implementation. A number of potential upgrades were recommended to address the performance issues.

ES.3 Cost Estimates

Cost estimates for the recommended upgrades and modifications were developed for the current situation and the long term master plan scenario. These costs are shown in the table below and include 40% contingency and GST.

Time Frame	Estimated Cost (inc GST)
Short term recommendations	$650,850
Long term recommendations	$1,113,600
Total	**$1,764,450**

These recommended actions will address all current issues identified and allow the implementation of the developments proposed in the master plan.

ES.4 Recommendations

The current operation of the transport network in Dickson was assessed and found to be generally good. However, addressing the following improvements should be prioritised in the short term:

- Pedestrian and cyclist infrastructure and safety:
  - Provide a pedestrian crossing on Challis Street near its intersection with Morphett Street
  - Provide a pedestrian crossing on Challis Street near the Telstra Building
  - Provide a pedestrian crossing on Antill Street near its intersection with Pigot Street (short term only)
  - Provide a pedestrian crossing on Dickson Shops Road close to the intersection with Cowper Street

- Monitor the safety of the pedestrian crossing on Challis Street north of Daramalan College and intervene with a raised pedestrian crossing if required
- Widen the 1.2m concrete paths around Daramalan College to 2.0 metres wide
- Provide better lighting on the path extension from Badham Street to the shared path to the south of the precinct to improve security
- Ensure pedestrian ramps along Challis Street have appropriate steepness for wheelchair access.
- Construct a new pedestrian/cyclist path connection from north of Rosevear Place to shared path to the south and swimming pool

▪ Car parking operations:
  - Implement better signage to inform users about the location of parking areas that are currently underutilised, especially the pool car park, the surface car park south of Dickson Place and the car park underneath the Dickson Tradies Club

▪ Road network and intersections
  - Signalise the intersection of Morphett Street with the southbound carriageway of Northbourne Avenue. The northbound carriageway would remain as it is.

These recommendations are expected to improve the transport operations and safety in Dickson in the short term.

A number of recommendations have been made to allow implementation of the master plan and these should be implemented as required. These recommendations include:

▪ Pedestrian and cyclist infrastructure and safety:
  - Provide north/south external links into Dickson by signalising the intersection of Antill Street and Badham Street
  - Improve pedestrian safety at the intersection of Morphett Street and Challis Street (preferably by signalisation)
  - Improve pedestrian safety at the intersection of Morphett Street and Cowper Street (preferably by signalisation)

▪ Car parking operations:
  - Implement an area wide parking strategy to efficiently plan parking for future developments

▪ Road network and intersections:
  - Signalise the intersection of Antill Street and Challis Street
  - Signalise the intersection of Challis Street and Cape Street
  - Signalise the intersection of Challis Street and Morphett Street
  - Signalise the intersection of Antill Street and Badham Street (also recommended to improve pedestrian access to Dickson from the suburbs to the north)
  - Signalise the intersection of Morphett Street and Cowper Street (also recommended to improve pedestrian safety around Daramalan College)

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1 INTRODUCTION

1.1 Background

Dickson Group Centre is one of the larger and more active group centres in Canberra and a master plan for the centre has been recently developed (May 2011). This master plan redefines building heights and the layout of the group centre in the longer term, which then allows for increased development in the area.

There have been concerns that the increased development and changes to the layout will have a negative impact on transport and parking in the area. The aim of this project is to assess the impacts of the proposed master plan and to develop options to address these impacts. In addition, the current public transport proposals for Dickson and the Northbourne Avenue corridor will be integrated with the future options for Dickson.

1.2 Objectives

The following are the main objectives of this study:

- Integrate transport into the Dickson Master Plan and consider the current public transport planning projects underway in the area
- Develop integrated parking and transport network provisions for the next 30 years (assuming that the Dickson Master Plan is implemented)
- Investigate the effects of the master plan developments on transport in and around the Dickson Group Centre and develop solutions if required
- Determine if and where road improvements will be required to address the increased development in the group centre
- Determine if changes need to be made to the Dickson Master Plan to address potential parking and transport impacts

1.3 Study Area

The study area for this project is shown in *Figure* ***1***. The study area includes the group centre and is bounded by Antill Street, Northbourne Avenue, Morphett Street, Cowper Street and Rosevear Place.

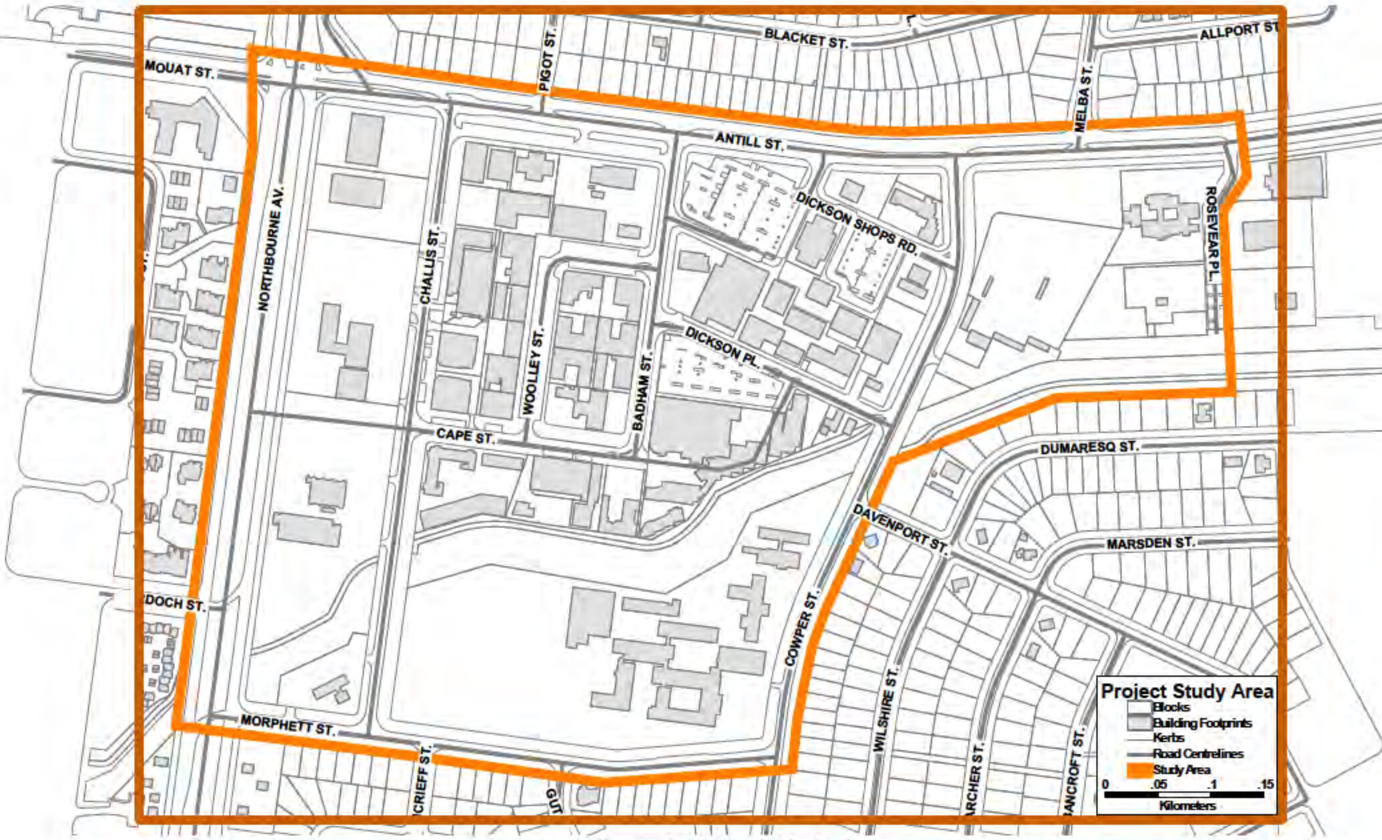

Figure 1: Project Study Area

2 REVIEW OF RELEVANT BACKGROUND REPORTS

SMEC has reviewed previous reports relating to traffic and parking in Dickson. These reports and a brief description of each are listed below:

- Dickson Master Plan, ACTPLA, May 2011
- Dickson Group Centre Temporary Parking Areas, Brown Consulting, May 2011
- Development Traffic Assessment Report for Block 19 and 21, Dickson Shops, Dickson, ACT, Brown Consulting, June 2011
- Dickson Group Centre Parking Utilisation Study, Brown Consulting, August 2011
- Dickson Temporary Car Parks, SMEC, August 2011

The Dickson master plan, developed by ACTPLA (now ESDD) is the primary background document for this study. The master plan examines the current situation and makes long term recommendations for the development of the precinct. The Dickson master plan also defines a number of sub-precincts in Dickson as shown in *Figure* **2**. These precinct names will be used in this study to refer to the relevant areas.

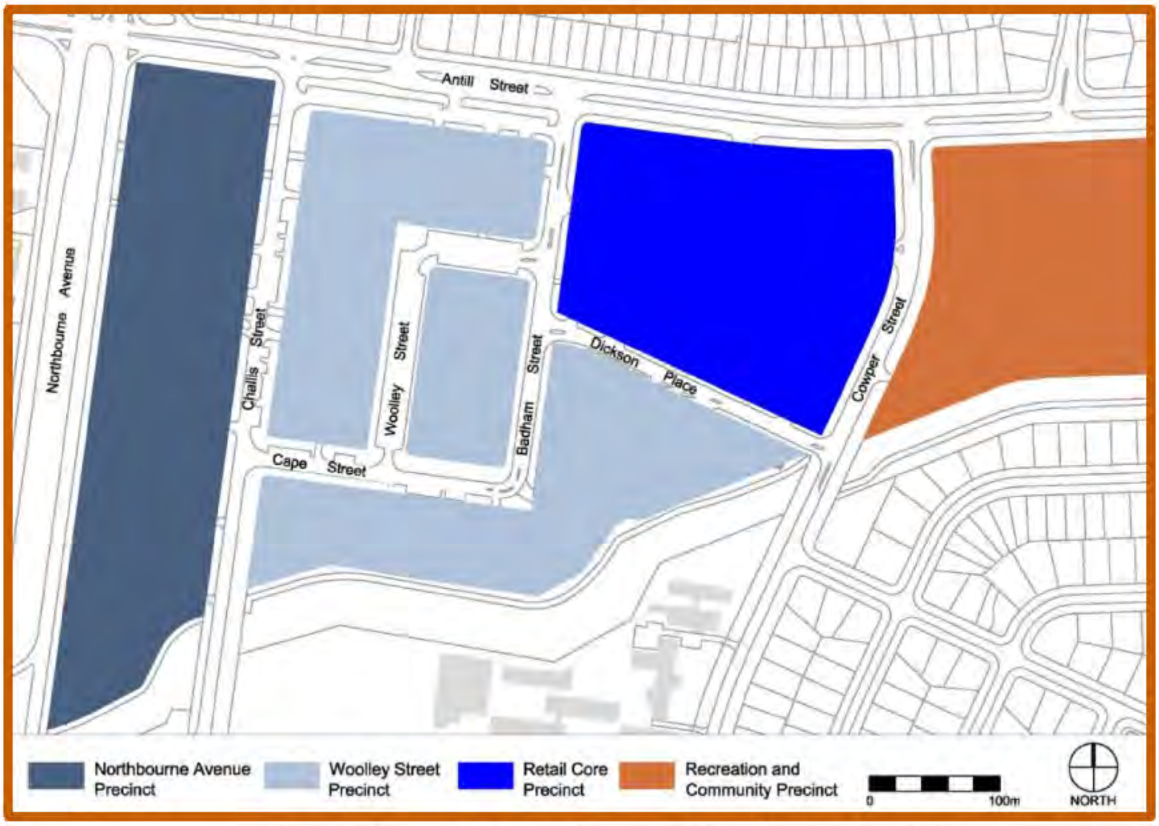

Figure 2: Dickson Precincts (Source: Dickson Master Plan, p19)

In May 2011, Brown Consulting undertook a brief examination of the Dickson area to determine if there were suitable areas able to be used for temporary car parking while redevelopment of existing car parks was underway. They found that there were a number of areas available and recommended further investigations into the following sites:

- Formal on-street parking on Antill Street
- An extension of the existing aquatic centre car park to the east
- A new parking area to the north of the aquatic centre
- Temporary parking on the old ACTAB site

These recommendations were examined in more detail in a later study by SMEC.

Brown Consulting conducted a traffic assessment report for the proposed developments on Block 19 and Block 21, which are currently open air car parks. This assessment found that the current car parks operate at, or slightly over, capacity during the main shopping peak, which is during the middle of the day on a Saturday. The conclusions of the study stated that the development is not expected to have a significant effect on traffic operations in the Dickson Group Centre. In addition, the development will cause a slight shortfall in parking provision, which is expected to lead to overspill of parking demand into adjacent areas.

In August 2011, a parking utilisation study for the Dickson Precinct was undertaken by Brown Consulting. This study found that there was significant spare parking capacity in the Dickson centre at all times, with utilisation rates of 51%-74% on weekdays and 40%-51% on weekends.

Also in August 2011, SMEC undertook concept design of four of the temporary parking areas suggested by Brown Consulting in May 2011. The concept design process included an investigation into existing drainage, vegetation and services. The designs produced included details of car park surface treatments, drainage, access, landscaping, lighting, impacts on vegetation and pedestrian connectivity. In addition, preliminary cost estimates for each of the four car parks were estimated.

3 EXISTING CONDITIONS

A number of investigations on the existing conditions in and around the Dickson Group Centre were conducted, which include the following:

- Examination of pedestrian and cycle network connectivity and condition
- Survey of pedestrian and cycle volumes
- Survey of parking supply and utilisation
- Survey of traffic volumes
- Micro-simulation modelling
- Intersection analysis

Currently, Dickson has a mixture of land use including office, commercial and entertainment. As these land uses have different peak times in terms of traffic generation, the surveys and analyses were conducted over four peak periods to gain a thorough understanding of the existing transport and parking conditions. The four peak periods specified by the client were:

- Weekday AM peak (7:00AM-10:00AM)
- Weekday PM peak (4:00PM-6:00PM)
- Weekend Mid-day peak (11:00AM-1:00PM)
- Weekend Evening peak (6:00PM-8:00PM)

The following sections provide detailed discussions of the investigations outlined above.

3.1 Pedestrian and Cycle Network

The pedestrian and cycle network assessment was based on a site inspection of Dickson Precinct and a desktop assessment of the pedestrian and cycle survey results.

Figure ***3*** shows the existing cycle and pedestrian path network within Dickson, based on GIS information obtained from TAMSD. A site inspection was carried out on 19 March 2012, which focused on identifying potential infrastructure and safety issues for pedestrians and cyclists.

Figure 3: Dickson Precinct Pedestrian and Cyclist Paths

3.1.1 Pedestrian and Cyclist Safety Assessment

Pedestrian Safety

The precinct is generally safe for pedestrians to move around with pedestrian crossings or signalised crossings on most pedestrian desire lines. However, there are some areas where pedestrian safety at road crossings should be considered:

- Safer access across Challis Street at the intersection with Morphett Street would improve safety for students accessing Daramalan College by walking along Morphett Street
- A second pedestrian crossing of Challis Street near the Telstra Building would benefit office building occupants accessing the Dickson business area (construction of a crossing in this location began after the site inspection was carried out)
- A formal pedestrian crossing on Antill Street near the Pigot Street intersection would provide better access from the subdivision area north of Dickson (in the short term only as signals will be provided at Challis Street in the long term)

The footpaths around Daramalan College are 1.2m wide concrete paths, 2.0m wide paths should be considered to allow groups to access them. In addition, they are narrow for a mix of pedestrian and bicycling use.

There is anecdotal evidence that the pedestrian crossing on Challis Street, just north of Daramalan College, is a regular accident site. No specific issues at this location were noted during the site visit. If there are persistent safety issues at this crossing, it is recommended that a raised pedestrian crossing be installed. This will increase the visibility of the crossing point and also force drivers to slow down as they approach.

Off-Road Bicycle Safety

There is a shared path running in a generally east-west direction to the south of Dickson that is used regularly by cyclists and pedestrians. There are three access points into Dickson from this path:

- Along Challis Street footpath
- Along Cowper Street footpath
- Footpath connection to Badham Street

Some paths on Challis Street, Badham Street, Cowper Street, Dickson Place and Antill Street are narrow and not suitable for shared usage by pedestrians and cyclists. The paved areas within the shopping areas have 90-degree blind corners and are not suitable for cycling.

On-Road Bicycling

There are no formal on-road cycle lanes marked within the Dickson Group Centre except for Northbourne Avenue. The internal streets have a lot of turning vehicles accessing intersections and car parking areas as well as reversing out of 90-degree on-street parking bays. The area is not considered to be a safe environment for on-road cycling under the current traffic control scheme.

Bus Services

The Dickson Group Centre has bus stops around the perimeter on Northbourne Avenue, Antill Street and Cowper Street. The maximum walking distance between the bus stops and employment/shops is approximately 600m across the precinct. An internal bus interchange would reduce that distance to less than 400m.

Lighting

All streets have street lighting and most public car parking areas have adequate lighting. The pedestrian areas through the shopping area have pedestrian style lighting. The regional shared path has been provided with lighting recently. The only pedestrian area to rely on ambient light is the path extension from Badham Street to the shared path on the south side of the precinct. This path is constrained by fences either side and has no passive security opportunity and provides a moderate security risk for users late at night.

Infrastructure Quality

The internal paths and crossings are in good condition with evidence of maintenance. Some concrete paths, both inside the precinct and on the perimeter are narrow for two way pedestrian/cycle use. Future path widening of these paths will improve the amenity.

3.1.2 Pedestrian and Cyclist Infrastructure Assessment

Path Widths

Concrete path widths outside the central retail area are generally 1.2m wide. Pedestrian traffic in some areas, particularly around Daramalan College would benefit from 2.0m wide paths to allow simultaneous bicycle and pedestrian access.

Morphett Street - Challis Street Intersection

Students cross Challis Street at the intersection when walking along the Morphett Street northern path. There is risk of conflict between turning vehicles and pedestrians. A controlled crossing should be considered.

Challis Street

During the AM peak, traffic generally formed platoons allowing adult pedestrians breaks in traffic to cross safely without traffic control.

Students accessing Daramalan College were observed to use the pedestrian crossing adjacent to the storm drain and access the college through a side gate.

Pedestrian movements appear to be low in the morning.

Movements may increase between the office blocks and food outlets during lunch break. A pedestrian crossing near the Telstra Building may be warranted.

Two steep pedestrian ramps were noted north of Dame Pattie Menzies House that are too steep for wheel chair access. These ramps are located at each end of the row of shops between Dame Pattie Menzies House and Antill Street. There is a footpath that runs adjacent to the ramps but this is often blocked by cars parking with their wheels against the kerb and their noses over the footpath.

Dickson Place

There is a pedestrian crossing from the shopping plaza area to the car park that requires pedestrians to share the area with circulating vehicles. The footpath adjacent to Dickson Place south has trees blocking access.

There is a paved walkway at the south-eastern end of the shopping plaza (approximately 40 metres west of the intersection with Cowper Street) that would provide a safer crossing if a pedestrian crossing was provided. However, a crossing at this location may have a negative impact on the operation of the intersection of Dickson Place and Cowper Street, which already provides a signalised pedestrian crossing, due to potential queuing caused by the crossing if pedestrian volumes are high.

Rosevear Place

There is no direct access from the area south of the storm drain, including the shared path, to the businesses in Rosevear Place.

There is a pedestrian path at the northern end of Rosevear Place. Pedestrians share the road with vehicles accessing car parks at the southern half of the road.

There is no formal path between the southern end of Rosevear Place and the swimming pool complex.

Cowper Street

There are four formal crossing points provided along Cowper Street, two are signalised and two are pedestrian crossings.

Dickson Shops Road has no pedestrian crossing close to the intersection with Cowper Street.

Antill Street

There are signalised pedestrian crossings at Cowper Street and another near the Dickson Library providing access to the north-east. The next signalised intersection is at Northbourne Avenue.

Pedestrian access across Antill Street from Pigot Street and to Challis Street is uncontrolled

Northbourne Avenue

There are pedestrian crossings at the Antill Street signalised intersection and a signalised pedestrian crossing at the shared path crossing near Morphett Street.

There are two uncontrolled mid-block crossing points with concrete paths in the median.

General Observations

Pedestrian access between Woolley Street, Badham Street and the car parks and plaza area are good with formal pedestrian crossings on desire lines. The condition of paths is generally good in this area.

3.1.3 Pedestrian and Cyclist Volumes

*Figure **4*** shows the locations where pedestrian and cyclist count surveys were conducted. Note that the locations are mostly the same as the intersection count survey locations discussed later in this report, except for some pedestrian crossings. As discussed earlier, four peaks were identified by the client and the surveys were conducted for those peaks.

Figure 4: Pedestrian and Cyclist Survey Locations

Figure 5 to *Figure **8*** show summaries of the pedestrian and cyclist survey for each peak period. The blue bars represent the total pedestrian movements through a location while the green bars represent the total cyclist movements through the location.

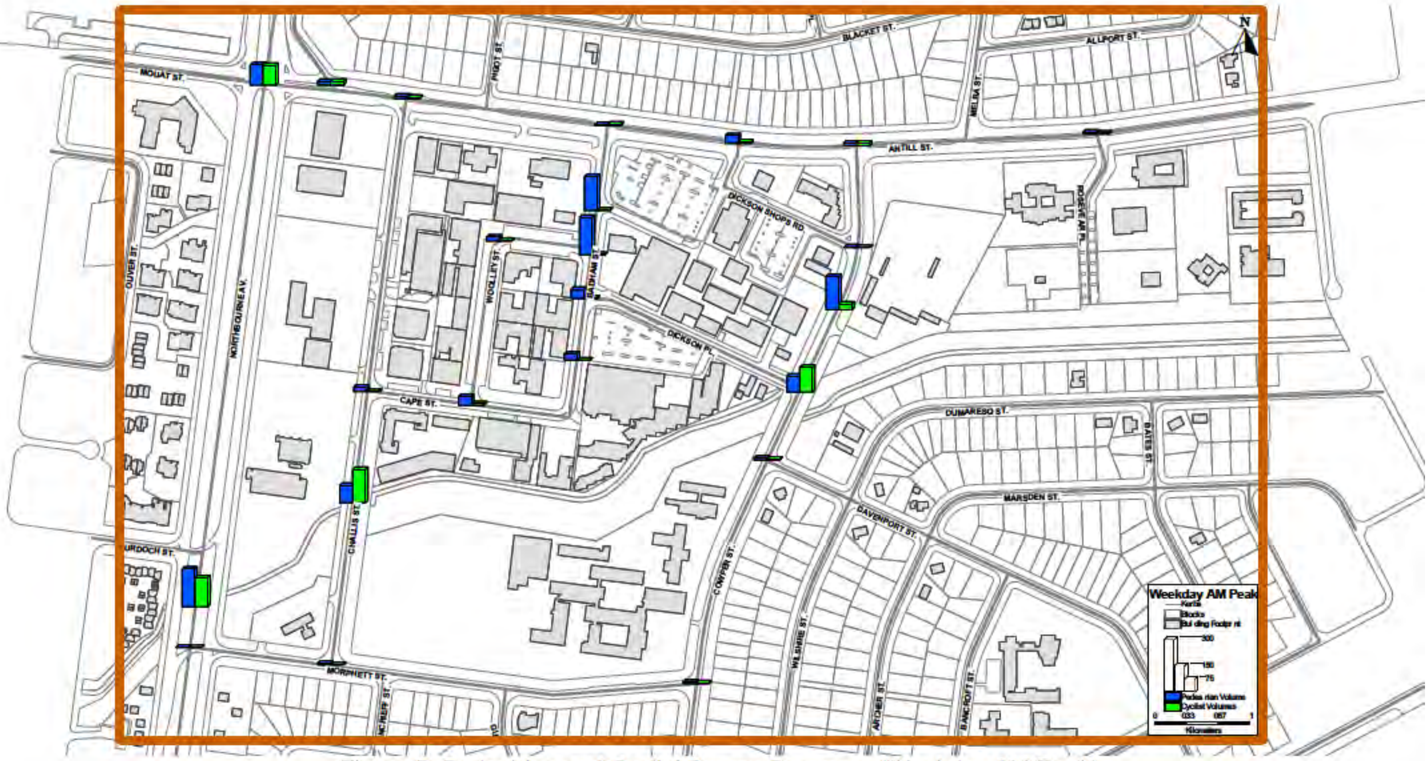

Figure 5: Pedestrian and Cyclist Survey Summary (Weekday AM Peak)

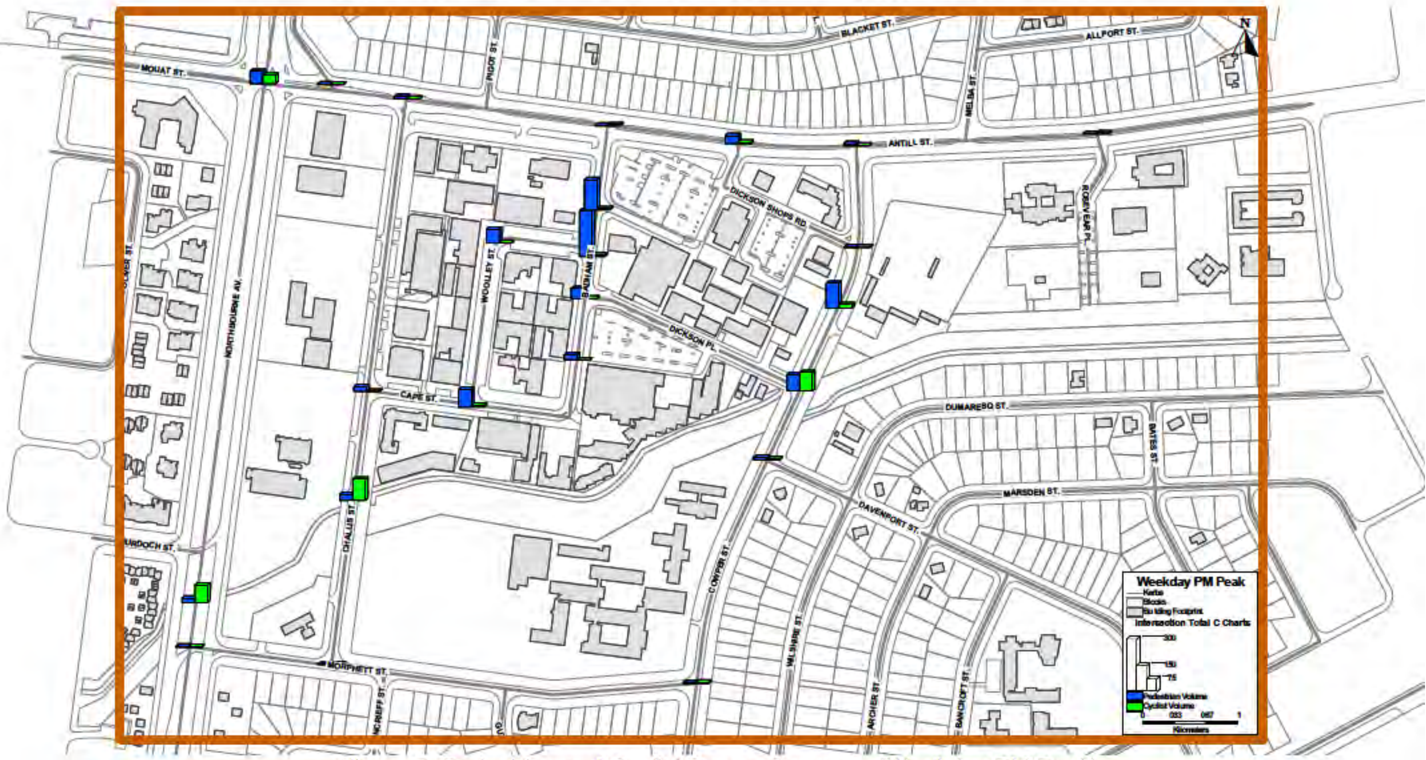

Figure 6: Pedestrian and Cyclist Survey Summary (Weekday PM Peak)

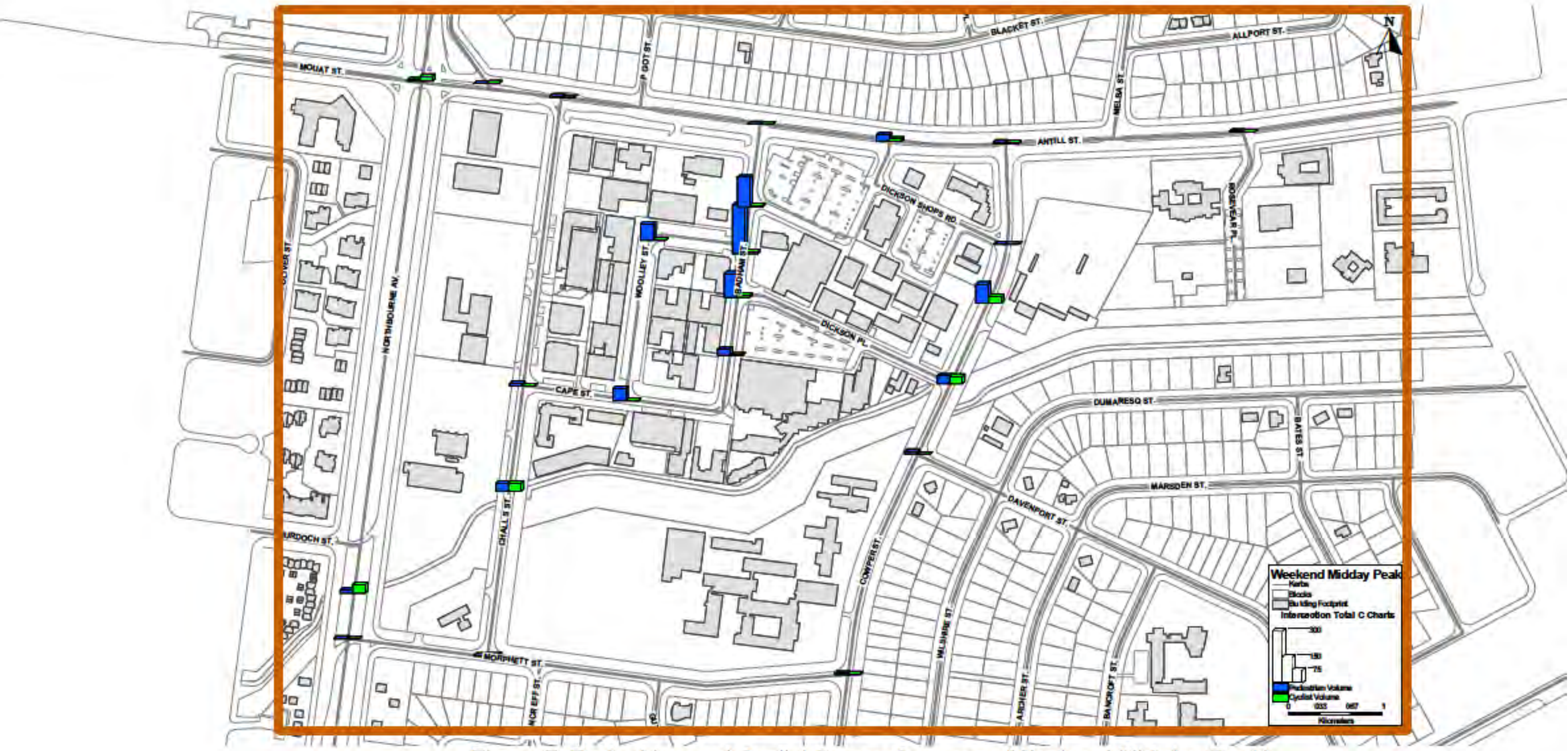

Figure 7: Pedestrian and Cyclist Survey Summary (Weekend Mid-day Peak)

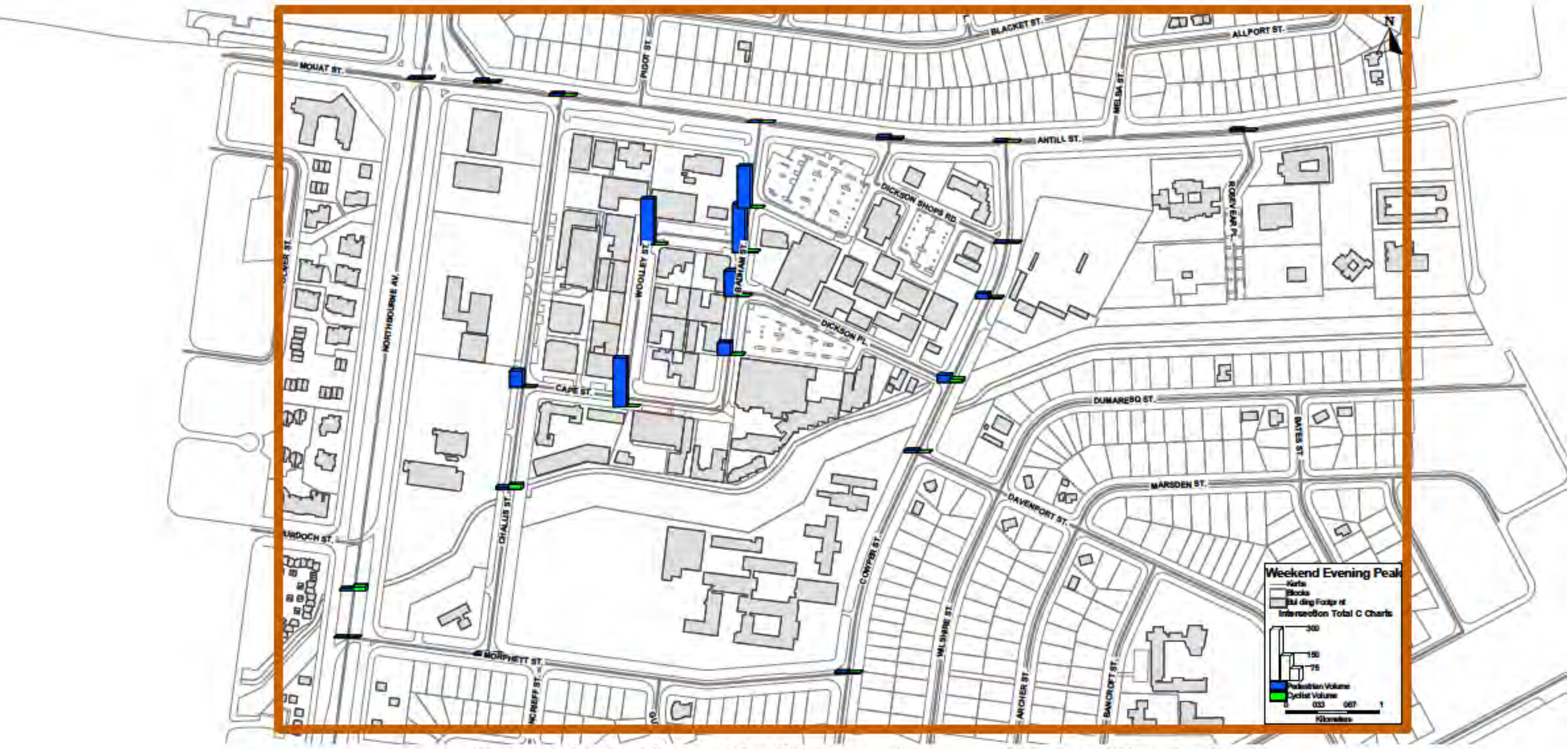

Figure 8: Pedestrian and Cyclist Survey Summary (Weekend Evening Peak)

*Table **1*** shows a summary of the volumes presented in the preceding figures.

Table 1: Summary of Pedestrian and Cyclist Survey (2 Hour Peak Period)

Location (Intersection)	Weekday AM		Weekday PM		Weekend AM		Weekend PM	
	Peds	Cycles	Peds	Cycles	Peds	Cycles	Peds	Cycles
1	117	113	70	48	7	27	2	3

Location (Intersection)	Weekday AM		Weekday PM		Weekend AM		Weekend PM	
	Peds	Cycles	Peds	Cycles	Peds	Cycles	Peds	Cycles
2	21	22	4	2	1	4	10	0
3	17	8	13	2	7	0	12	2
4	9	11	4	6	1	0	3	2
5	46	10	46	8	37	13	17	3
6	17	17	13	4	8	6	8	4
7	13	7	3	7	6	4	8	1
8	193	3	171	6	171	8	240	2
9	3	0	4	2	2	0	5	0
10	213	3	259	8	295	13	334	7
11	52	3	58	3	139	15	149	5
12	93	141	91	104	45	43	42	19
13	25	0	26	0	15	0	96	0
14	49	10	102	10	72	2	305	1
15	11	6	16	7	16	0	13	3
16	0	0	6	4	5	0	2	0
17	11	1	0	3	5	6	5	0
18	9	5	4	7	7	5	8	4
19	215	164	25	99	18	50	13	27
20	101	191	33	121	46	46	14	25
21	35	0	29	0	35	3	74	4
22	23	2	76	2	93	2	265	3
23	190	34	143	21	110	38	28	6
Total	**1,463**	**751**	**1,196**	**474**	**1,141**	**285**	**1,653**	**121**

These figures and table show that Badham Street and the northern section of Cowper Street are utilised heavily by pedestrians during all four peak periods of the survey, except for Cowper Street in the weekend evening peak. Cape Street and Woolley Street are also heavily used by pedestrians during all peaks with the exception of the weekday AM peak period.

The shared path north of Daramalan College carries a significant number of cyclists and pedestrians at the crossings with Cowper Street, Challis Street, and Northbourne Avenue, mainly during the weekday peaks. The shared path tends to have more cyclists than pedestrians during both weekday peak periods and is likely to be used primarily by commuters. During the weekend peak periods, this path is utilised considerably less than during the weekday peak periods.

3.2 Parking Assessment

The parking assessment was based on a parking utilisation survey which was conducted during the same four peak periods specified for the pedestrian and cyclists count surveys. *Figure* **9** shows the location of the parking areas that were surveyed. It is noted that the surveys do not include the structured car park to the north of Dame Pattie Menzies House (on Challis Street) or the on-street parking areas on Antill Street. Previous studies in Dickson indicate that the capacity of the on-street parking area on Antill Street could hold up to 62 cars if it was properly marked. In its current unmarked state, it has a capacity of 44 cars. Utilisation of this area peaks at 64% during the week and 27% on weekends. The structured car park on Challis Street has a capacity of 329 vehicles, including 4 disabled spaces (data provided by ESDD). No previous utilisation data is available for this car park.

The weather during the survey periods was mainly fine and there was no rainfall recorded on the weekday surveyed. There was heavy rain recorded after 7:00pm on the weekend day surveyed. This may have had some impact on the evening parking utilisation survey.

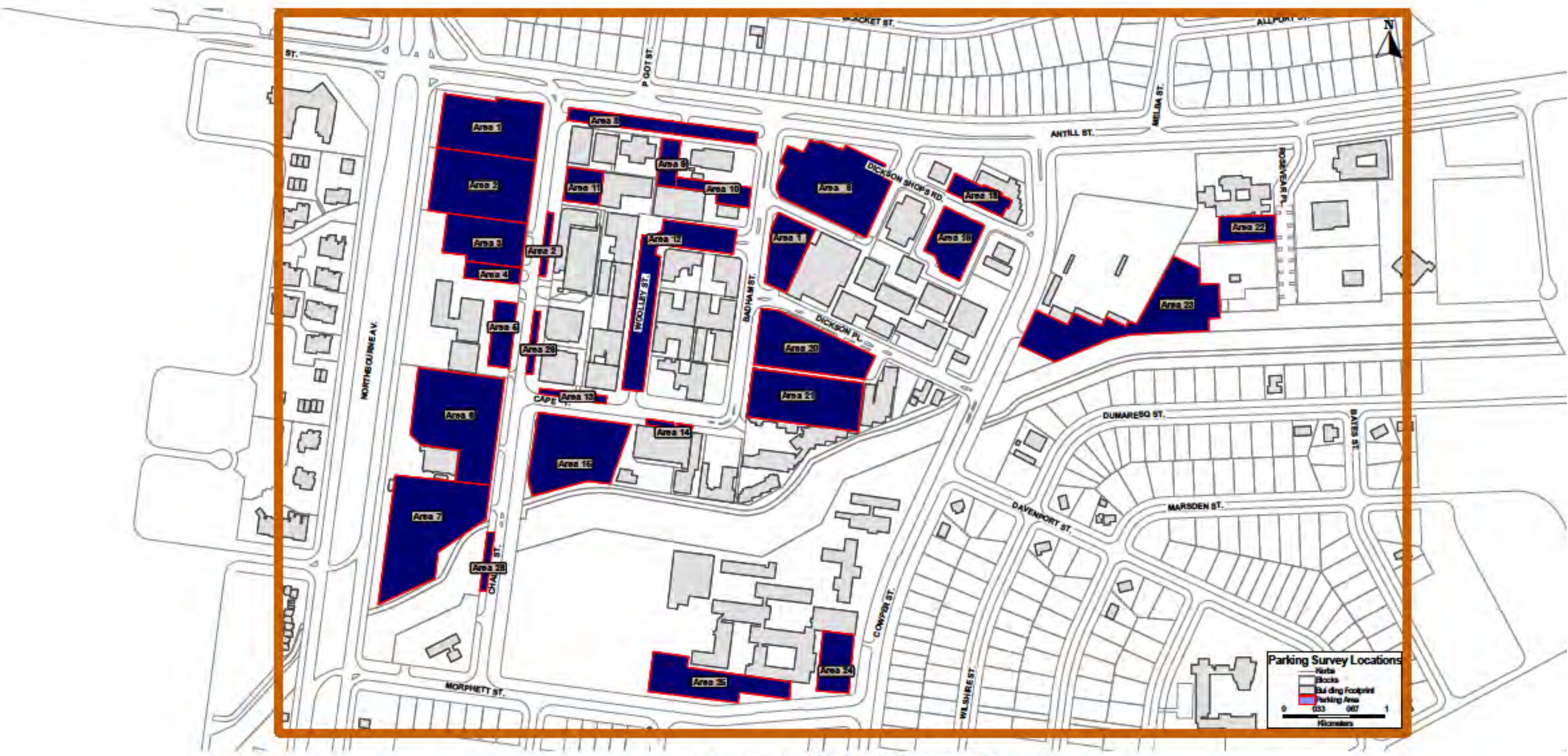

Figure 9: Parking Survey Areas

Figure **10** shows the proportion of parking allocations and parking restrictions in each area. It can be seen that Dickson Precinct has a significant number of long term parking spaces, mainly associated with the Northbourne Avenue Precinct, followed by short term parking. Parking spaces are well distributed throughout the precinct, with the majority of the short term parking located closer to the commercial areas.

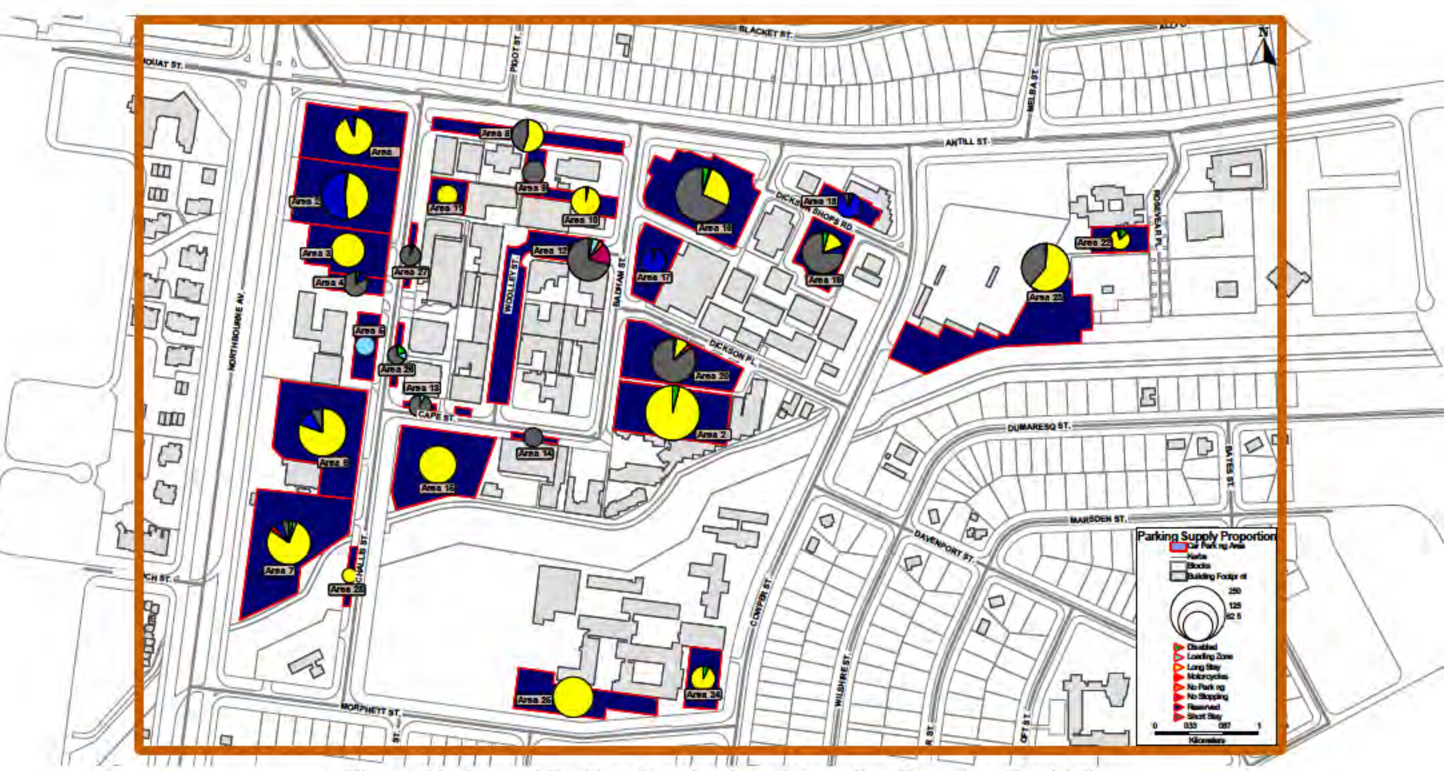

Figure 10: Current Parking Supply at each Location Based on Restrictions

Figure **11** to *Figure* **14** provide a summary of the parking utilisation survey.

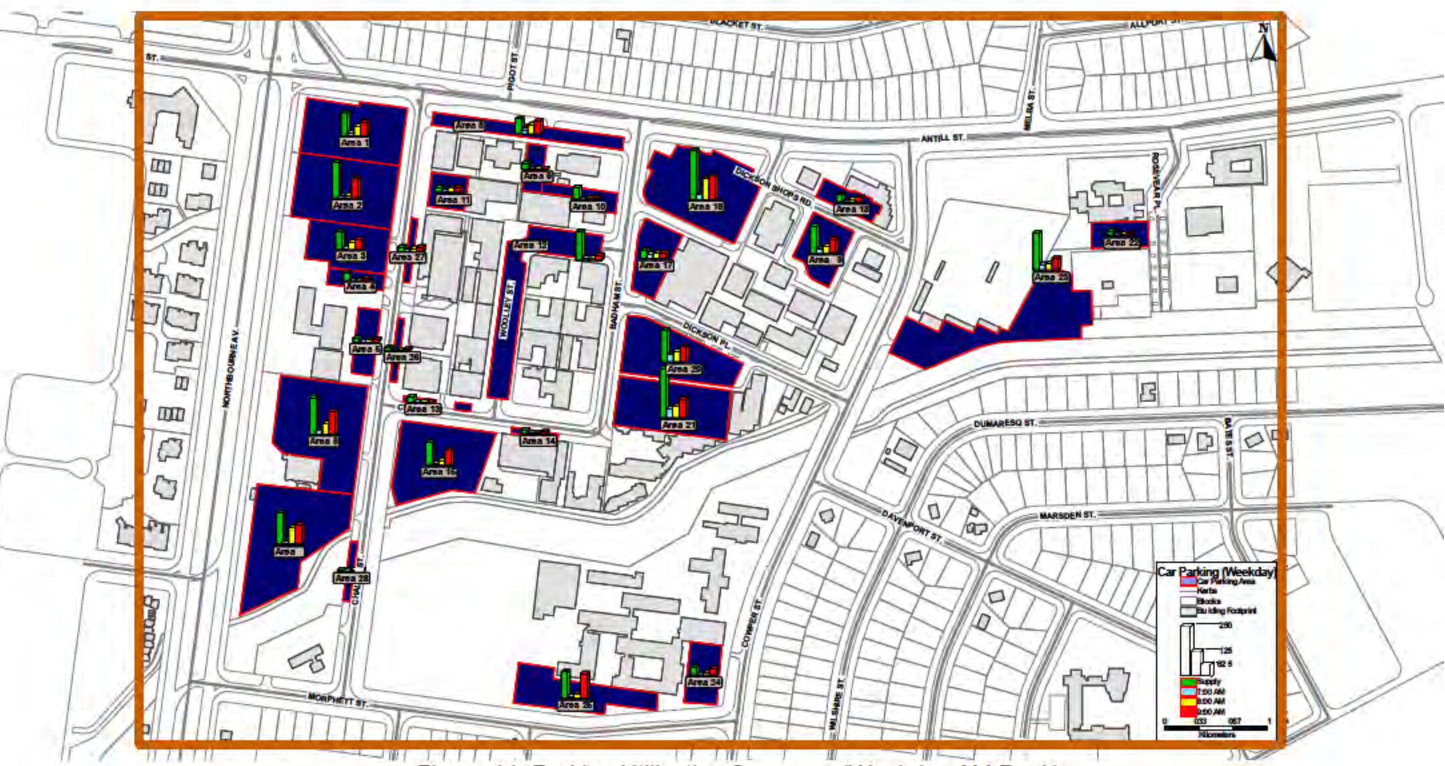

Figure 11: Parking Utilisation Summary (Weekday AM Peak)

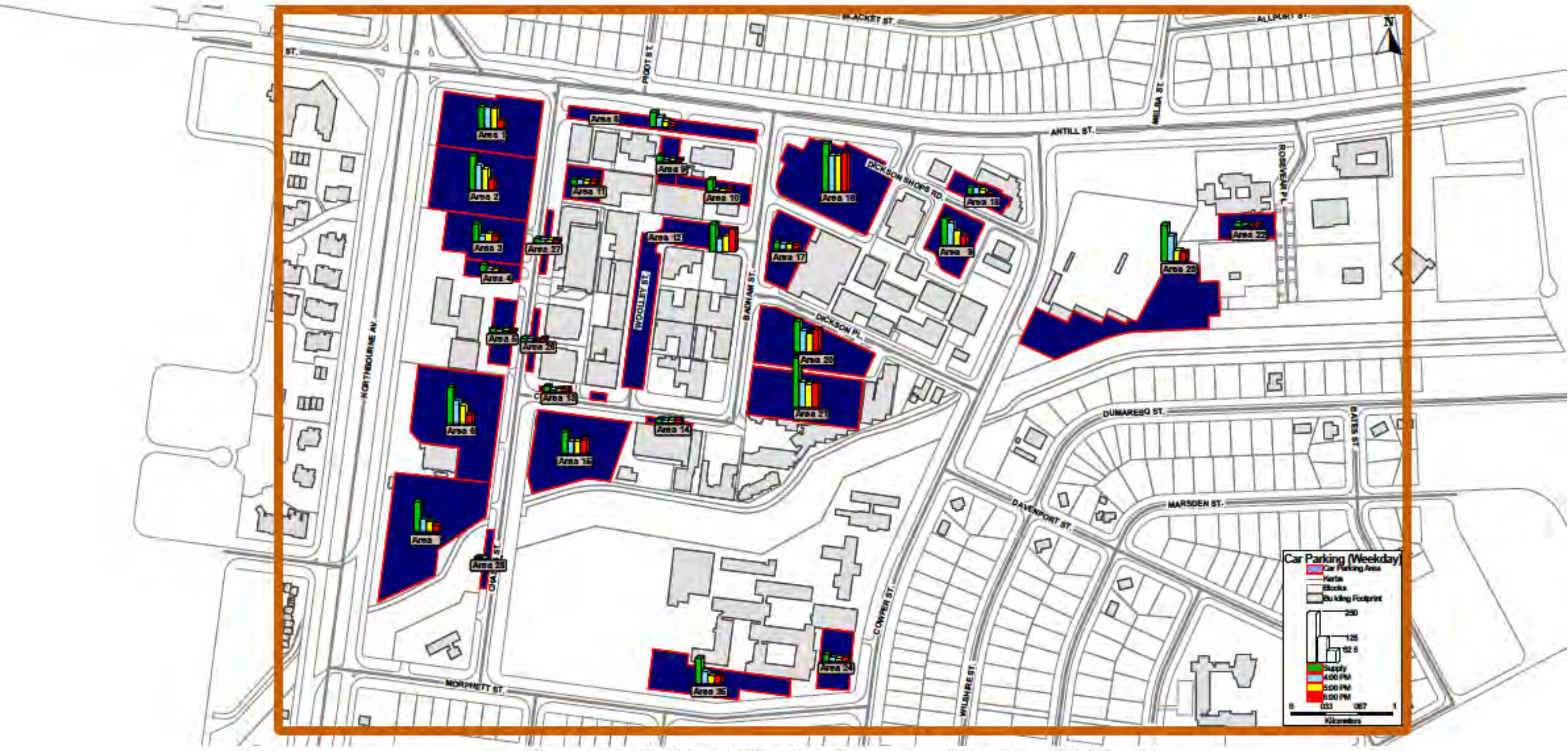

Figure 12: Parking Utilisation Summary (Weekday PM Peak)

Figure 13: Parking Utilisation Summary (Weekend Midday Peak)

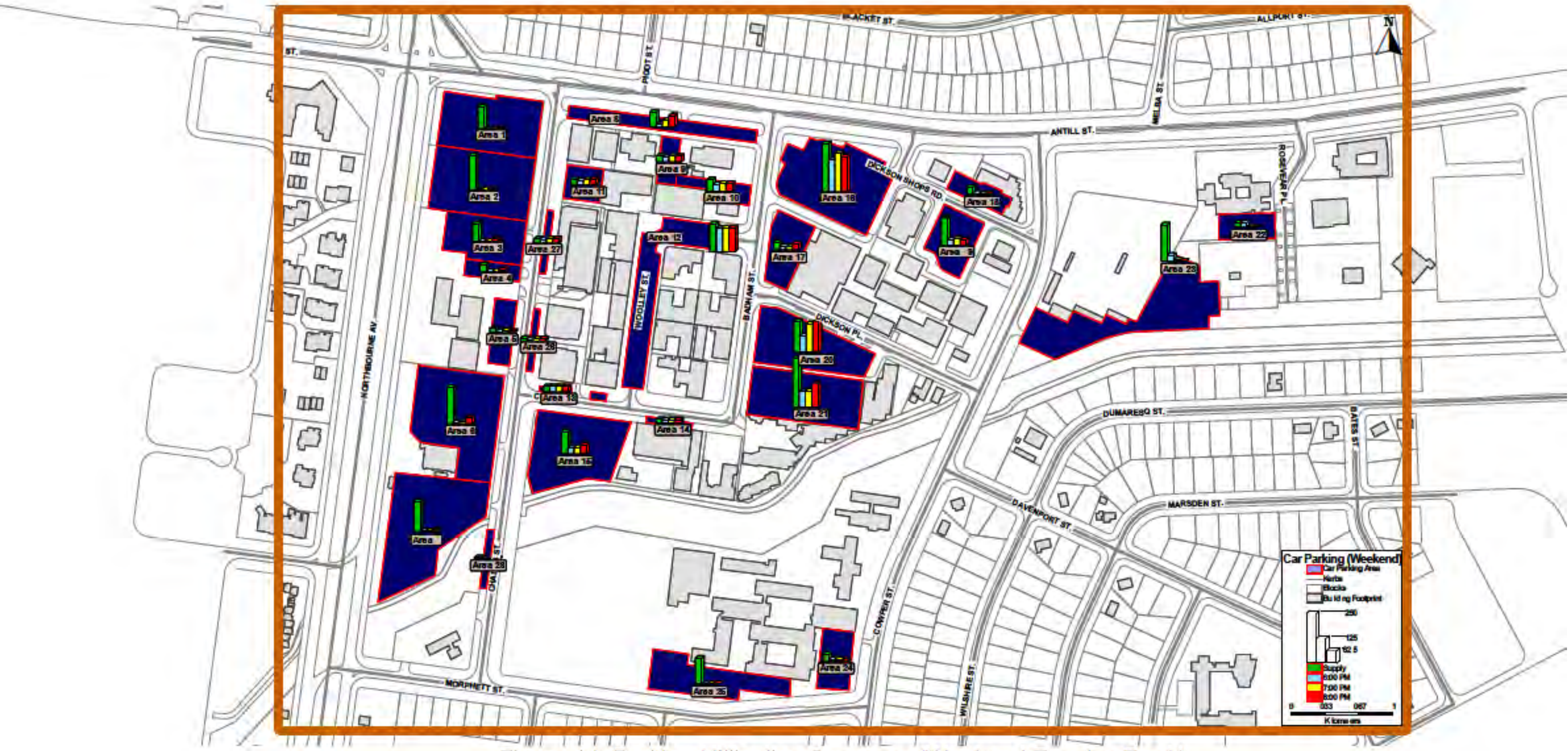

Figure 14: Parking Utilisation Summary (Weekend Evening Peak)

The figures shown above indicate areas where there is expected to be high demand for parking and which time period that demand occurs in. *Table* **2** shows the actual supply and demand for each of the parking areas in each of the time periods surveyed.

Table 2: Summary of Parking Utilisation Survey for the Dickson Precinct

Location (Parking Area)	Supply	Thursday, 16 February 2012						Weekend, 18 February 2012					
		7:00	8:00	9:00	16:00	17:00	18:00	11:00	12:00	13:00	18:00	19:00	20:00
1	111	15	47	69	**107**	**100**	43	2	1	1	0	0	1
2	176	11	15	95	129	107	53	6	6	3	6	4	6
3	87	6	37	49	27	37	27	4	3	3	1	0	10
4	35	0	0	11	16	11	0	0	0	0	1	2	10
5	20	0	10	12	14	12	8	0	0	0	5	12	7
6	183	20	55	114	116	94	48	12	5	3	8	9	30
7	151	12	79	95	63	48	33	13	9	4	3	4	9
8	74	21	46	64	49	30	15	14	18	19	12	33	57
9	30	0	2	3	14	7	9	12	18	13	24	**29**	**29**
10	58	0	3	6	8	11	15	14	21	20	36	40	41
11	25	7	21	**24**	**24**	22	20	18	21	**23**	20	**24**	**25**
12	141	13	11	25	63	78	110	103	109	115	117	121	121
13	27	1	2	0	12	14	17	14	19	21	**26**	**27**	**26**
14	18	3	2	8	16	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**
15	110	7	23	72	65	65	72	54	42	47	29	32	44
16	242	23	102	116	182	180	191	195	**233**	**228**	159	193	177
17	38	21	25	28	32	27	23	19	22	24	17	15	31

Location (Parking Area)	Supply	Thursday, 16 February 2012						Weekend, 18 February 2012					
		7:00	8:00	9:00	16:00	17:00	18:00	11:00	12:00	13:00	18:00	19:00	20:00
18	36	0	13	23	32	24	2	20	11	5	5	1	1
19	135	21	36	72	112	69	44	113	123	124	26	32	27
20	154	35	52	74	107	91	114	147	141	147	80	141	149
21	244	46	57	93	127	115	117	91	74	66	79	82	117
22	22	2	6	10	12	8	15	19	17	18	22	0	0
23	183	27	31	58	129	55	46	130	134	124	31	7	2
24	37	1	11	32	20	16	19	11	15	9	11	10	4
25	129	9	17	120	64	41	39	3	5	2	2	2	3
26	15	0	2	8	11	4	11	3	3	10	9	12	13
27	21	3	15	21	19	17	13	17	21	19	19	21	21
28	7	3	7	7	4	1	0	0	0	0	0	0	0
Total	**2,509**	**307**	**727**	**1,309**	**1,574**	**1,301**	**1,121**	**1,051**	**1,088**	**1,065**	**765**	**870**	**978**
		12%	**29%**	**52%**	**63%**	**52%**	**45%**	**42%**	**43%**	**42%**	**30%**	**35%**	**39%**

Table **2** shows that the total utilisation of parking in Dickson is relatively low, peaking at 63% at 4:00 PM on a weekday. However, the parking demand is not evenly distributed and there are a number of parking areas operating close to capacity, which are indicated in red in the table. A number of these parking areas are small (Areas 9, 11, 13, 14, 22, 27 and 28) and excess demand for these areas is likely to be met in adjacent sites. However, large areas such as Areas 1, 16, 19, and 20 that are operating close to capacity indicates that there are likely to be large numbers of vehicles circulating and searching for space.

A number of car parks in Dickson are access controlled and are not accessible to the public. These controlled car parks include Areas 1, 2, 3, 6, 7, 24 and 25. While 24 and 25 are not controlled, they are used by Daramalan College and are too far from the Dickson Centre to be used by people travelling to Dickson. Area 3 has its boom gates removed after workday business hours and on weekends and becomes publicly accessible. However, it is not heavily utilised in the weekend peaks.

As mentioned earlier, the DPMH structured car park and Antill Street on-street car parking areas were not surveyed. These areas would add 391 spaces to the supply in Dickson but the utilisation of these areas is not known.

Table **3** shows a summary of the supply and utilisation for private and publicly accessible parking areas in Dickson.

Table 3: Summary of Public and Private Parking for the Dickson Precinct

Type	Supply	Thursday, 16 February 2012						Weekend, 18 February 2012					
		7:00	8:00	9:00	16:00	17:00	18:00	11:00	12:00	13:00	18:00	19:00	20:00
Private	874	74	261	574	526	443	262	51	44	25	31	29	63
Utilisation		8%	30%	66%	60%	51%	30%	6%	5%	3%	4%	3%	7%
Public	1,635	233	466	735	1,048	858	859	1,000	1,044	1,040	734	841	915

Type	Supply	Thursday, 16 February 2012						Weekend, 18 February 2012					
		7:00	8:00	9:00	16:00	17:00	18:00	11:00	12:00	13:00	18:00	19:00	20:00
Utilisation		14%	29%	45%	64%	52%	53%	61%	64%	64%	45%	51%	56%

This table shows that the private parking demand peaks at 66% at 9:00am on a weekday. This peak may change if the utilisation of the offices in the Northbourne Precinct changes. The current utilisation is not known. The DPMH structured car park would add 329 spaces to the private supply, presumably with a similar utilisation as the other private car parks in the area.

On the weekend, the private parking is almost completely empty as these car parks serve offices and Daramalan College, which are not typically used on the weekend. The publicly accessible parking demand peaks at 64%. This demand is reached during both the weekday PM and the weekend midday peak periods.

From *Table* **2** and the earlier figures, two disparate groups with demand for parking were identified, namely:

- Commuters and students
- Shoppers and diners

These two groups are discussed in more detail in the following sections.

3.2.1 Commuter and Student Parking

The parking survey shows that the parking areas in the Northbourne Avenue precinct, between Challis Street and Northbourne Avenue, (Areas 1-7 with exception of Area 5) and Daramalan College (Areas 24 and 25) appear to be mainly used by commuters and students. These parking areas share a similar pattern of parking utilisation for each peak period of the parking survey.

During the AM peak period these parking areas have their highest utilisation, increasing between 7:00 AM and 9:00 AM. During the PM peak period they are progressively emptied as commuters and students go home. During both weekend peak periods these parking areas have near zero utilisation.

It is noted that most of the parking areas west of Challis Street are gated, and are currently underutilised. The parking survey shows that the untimed parking spaces in Areas 1 to 7 are only 62% utilised by 9:00 AM on weekdays. This is the highest utilisation rate recorded for these parking areas during any of the four peak periods.

The non-gated untimed parking spaces near Challis Street (Areas 8, 11 and 28) have near 100% utilisation by 9:00 AM on weekdays. Moreover, these parking areas empty during the PM peak period in the same pattern as the gated parking areas west of Challis Street, and it is assumed that these parking areas are primarily used by commuters that do not have access to the gated parking areas.

It is also noted that the paid parking Area 15 had only 65% utilisation by 9:00 AM on a weekday, which was its highest utilisation in any surveyed peak. Thus, it appears that there is no immediate need for additional parking for commuters along the western side of Dickson. However, the relatively low utilisation of the gated parking areas and the high utilisation of the non-gated car parks suggest that better management of the parking in this area may be of some benefit.

The parking survey conducted did not allow for the identification of which land use drivers from each car park were accessing. If it is the case that workers in buildings with gated car parks are using non-gated car parks, they should be encouraged to use the gated parking areas. This will ease utilisation of the untimed parking areas along Challis Street where time restrictions could then be applied to provide more opportunities for customer access to the adjacent commercial centre.

3.2.2 Shopping and Dining Parking

The parking areas in the Woolley Street Precinct and Retail Core Precinct tend to be heavily utilised during the PM peak, and are also heavily used during both weekend peak periods.

Demand is distributed across these two precincts fairly evenly during the weekend midday peak period with some spare capacity in Areas 8, 15 and 21. There is also some spare capacity in Area 23.

During the weekend evening peak period, demand is centred more on Woolley Street itself. There is now some spare capacity in Areas 19 and 23. Area 15 remains underutilised in this time period as well.

3.3 Traffic Assessment

3.3.1 Traffic Count Surveys

*Figure **15*** shows the locations of the surveyed intersections as part of this study. A total of 18 intersections were surveyed, three of which (Intersections 1, 6 and 12) are signalised, while the rest are priority controlled. Vehicles were classified as either ‘Light’ or ‘Heavy’.

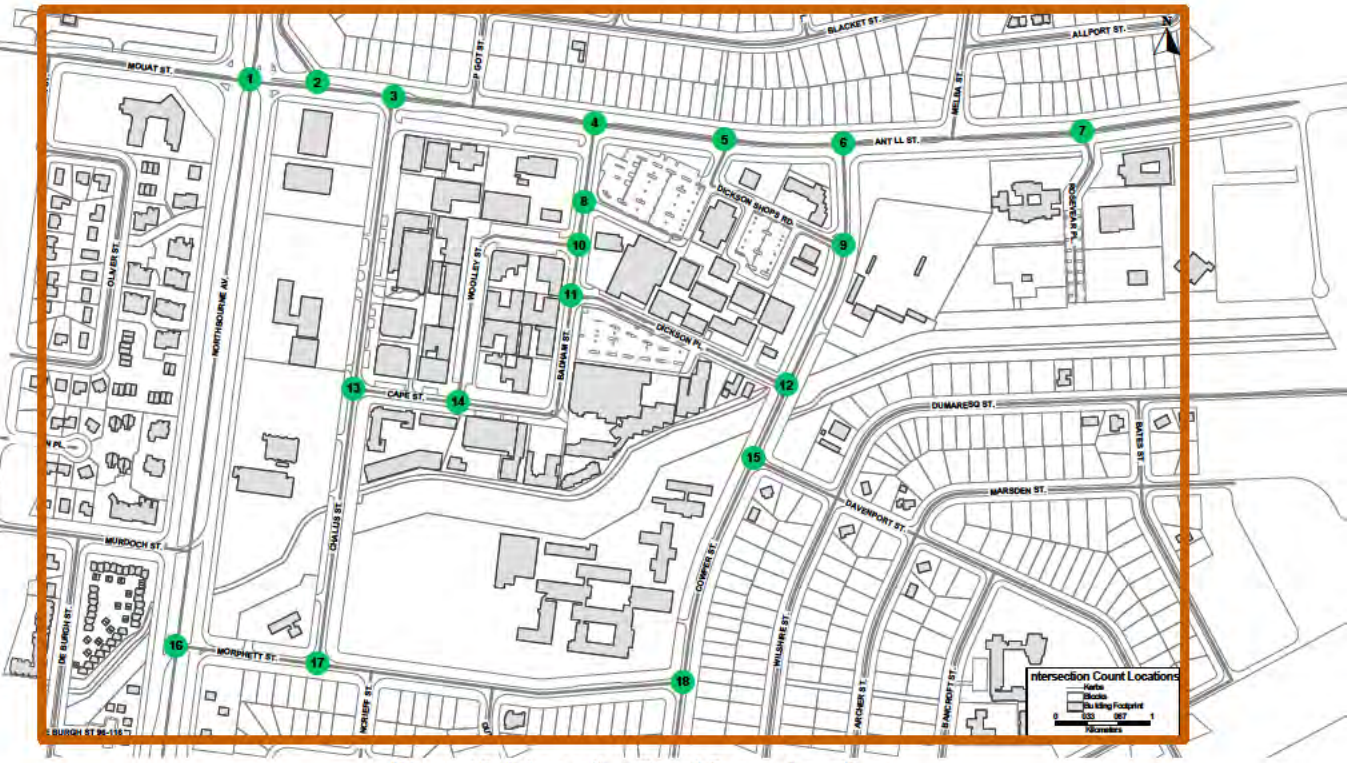

Figure 15: Intersection Count Survey Locations

Figure 16 to ***Figure 19*** show summaries of the traffic survey. The volumes shown at each location are the total volumes passing through that site for the relevant two-hour peak period.

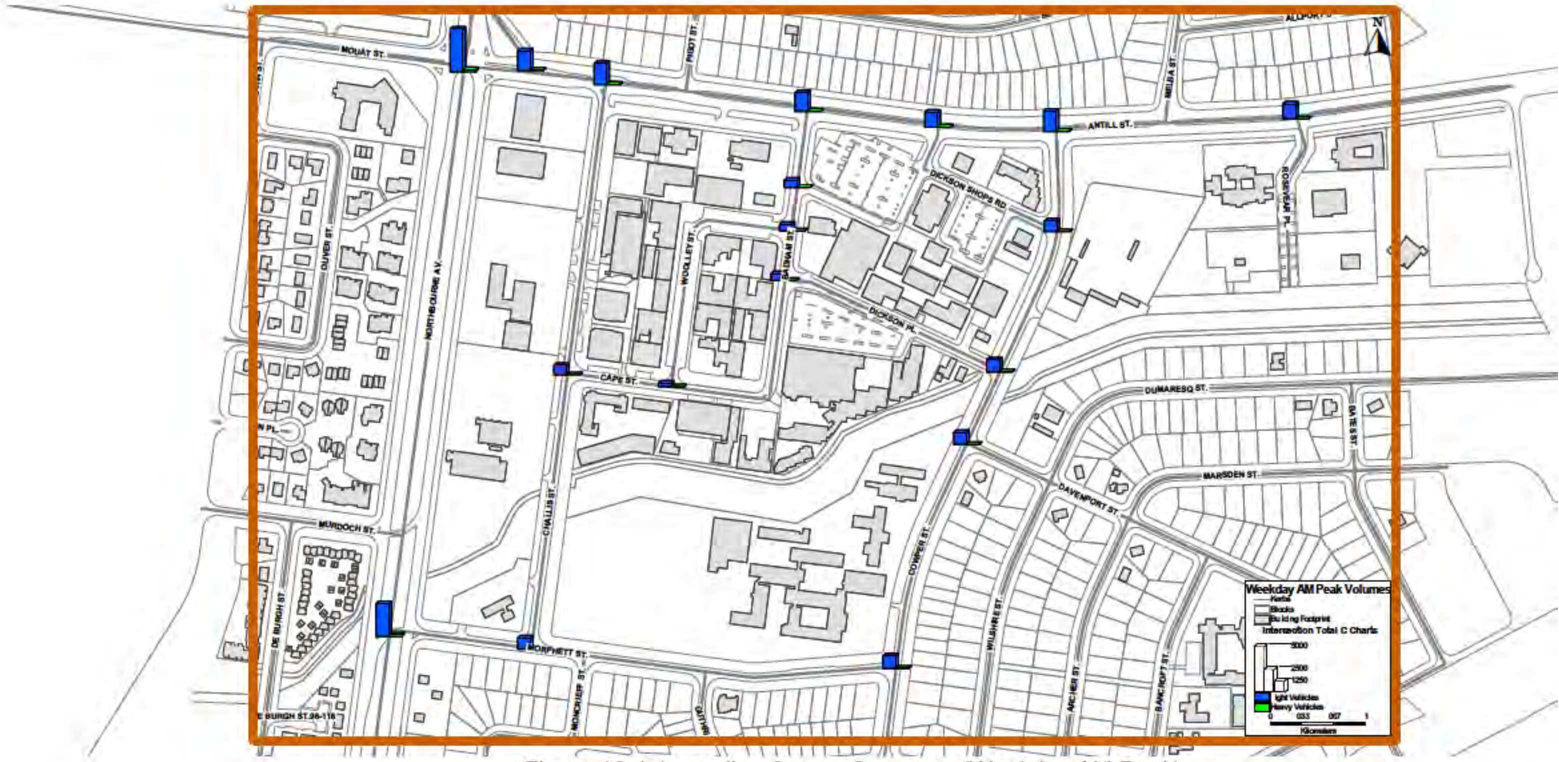

Figure 16: Intersection Survey Summary (Weekday AM Peak)

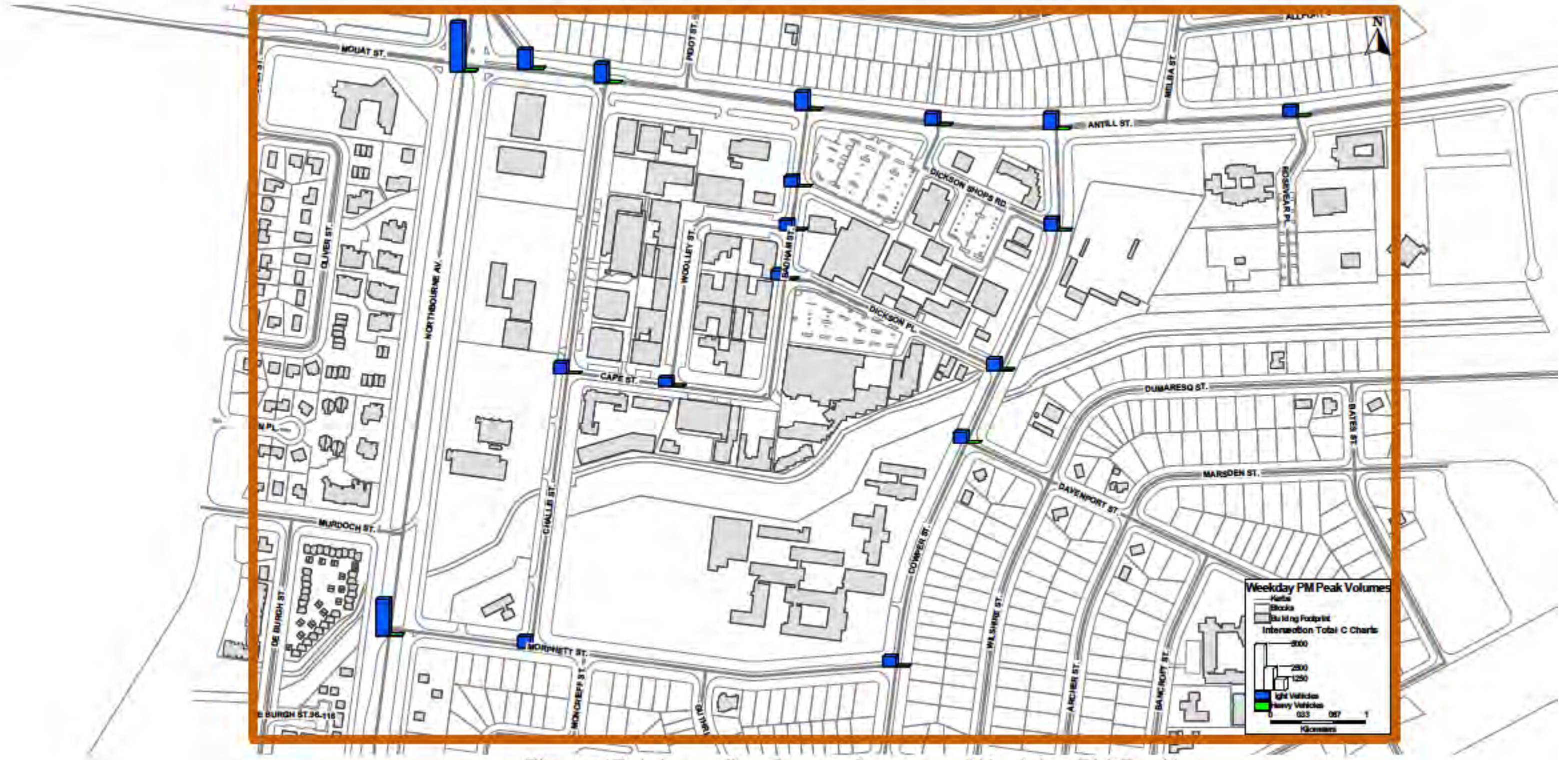

Figure 17: Intersection Survey Summary (Weekday PM Peak)

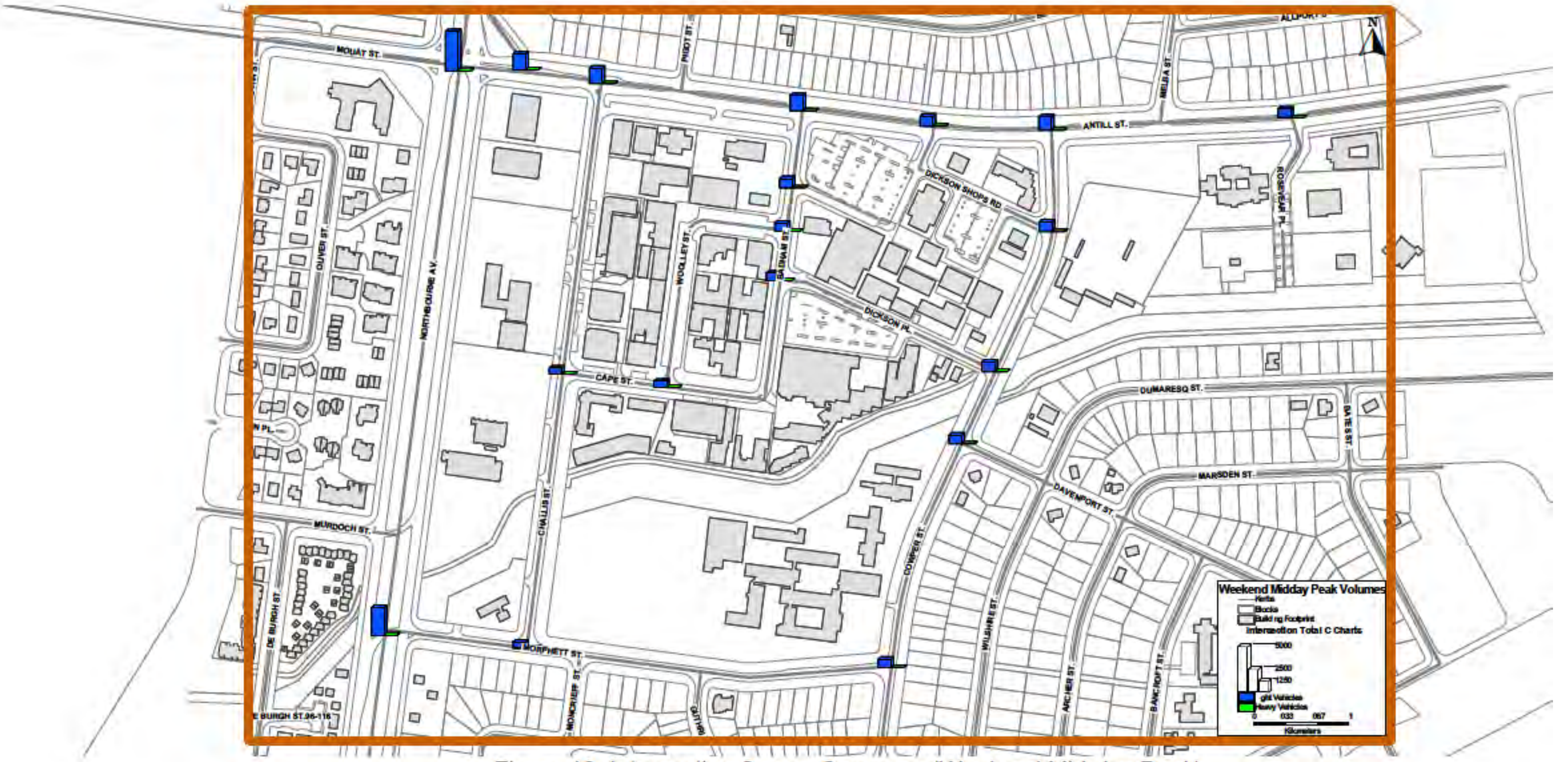

Figure 18: Intersection Survey Summary (Weekend Mid-day Peak)

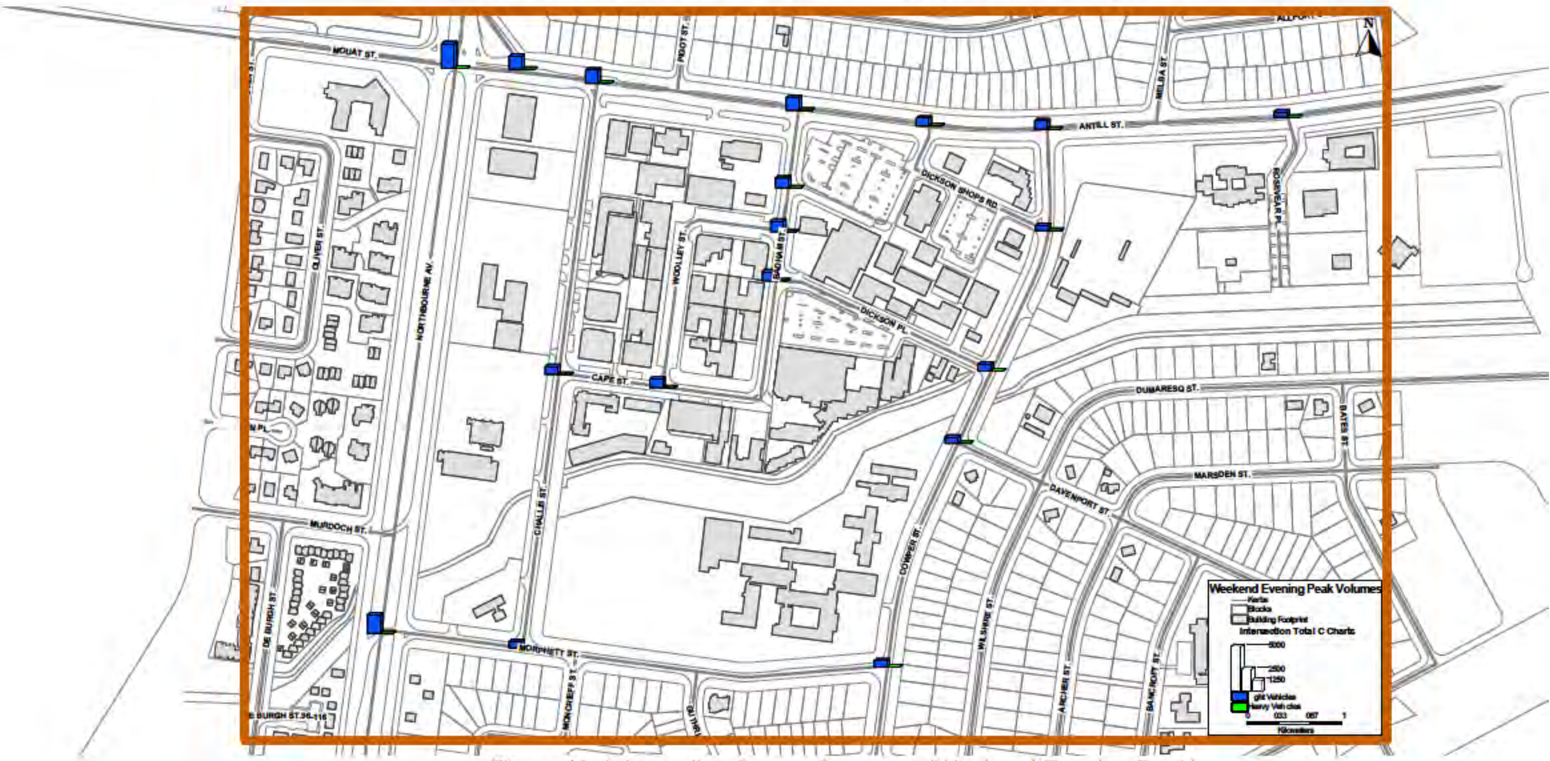

Figure 19: Intersection Survey Summary (Weekend Evening Peak)

Table ***4*** shows a summary of the results presented in the previous figures.

Table 4: Summary of Light and Heavy Vehicle Survey (2 Hour Peak Period)

Location (Intersection)	Weekday AM		Weekday PM		Weekend AM		Weekend PM	
	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy
1	4,690	244	5,402	138	4,351	85	2,708	26

Location (Intersection)	Weekday AM		Weekday PM		Weekend AM		Weekend PM	
	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy
2	2,161	61	2,125	36	1,695	13	1,428	9
3	2,332	75	2,135	38	1,716	15	1,440	9
4	2,035	63	1,983	37	1,677	12	1,385	8
5	1,639	54	1,347	36	1,110	11	836	4
6	2,252	66	1,811	43	1,458	15	916	7
7	1,646	35	1,135	14	944	6	595	2
8	786	19	1,113	7	1,013	3	1,081	5
9	1,181	36	1,338	25	1,066	12	553	7
10	728	19	1,052	7	868	3	1,168	6
11	748	23	1,006	6	809	3	1,001	4
12	1,334	43	1,262	26	1,068	13	706	6
13	1,027	18	1,237	3	672	4	881	1
14	423	11	922	1	658	3	963	2
15	1,338	39	1,198	17	983	10	675	3
16	3,603	188	4,022	107	3,042	59	2,034	20
17	1,248	28	1,218	4	670	5	695	1
18	1,388	47	1,112	25	931	7	655	3
Total	**30,559**	**1,069**	**31,418**	**570**	**24,731**	**279**	**19,720**	**123**

These figures and table show high traffic volumes on Northbourne Avenue and Mouat Street/Antill Street in all peak periods. These roads, together with the roads surrounding the core of the Dickson precinct (i.e. Cowper Street and Morphett Street), carry the largest amount of traffic during weekday peak periods. The western and northern boundaries of the Dickson precinct experience their highest volumes during the PM peak, whilst the southern and eastern boundaries of the Dickson precinct experience their highest volumes during the AM peak, possible due to the location of Daramalan College.

During the weekend peaks, the internal roads of Dickson Precinct (e.g. Badham Street and Dickson Place) carry more traffic during the evening peak than the midday peak period, as shown in *Figure* ***18*** and *Figure* ***19***. The opposite trend is seen on the external roads during the two weekend peaks.

Northbourne Avenue carries most of the heavy vehicles with more than 150 heavy vehicles during the AM peak period but this is only a small proportion of the total traffic volume.

3.3.2 Micro-simulation Modelling Calibration Results

Micro-simulation models for the four peak periods were developed for the assessment of the Do Nothing and master plan scenarios. Below is a summary of the process and the calibration results.

Origin – Destination (OD) matrix estimation was performed using Paramics Estimator V6, with input from intersection turn counts conducted as part of this study. Estimator generates an OD matrix by iteratively adjusting a previous OD matrix to provide a trip pattern that more closely matches the supplied count data.

The accuracy of OD matrix estimation is gauged by the GEH statistic, which compares the modelled (M) volumes to the counted (C) volumes. It has the effect that as C increases, the allowable difference as a proportion of C decreases. The GEH statistic is given by the equation:

$$GEH = \sqrt{\frac{2(M-C)^2}{M+C}}$$

Where:

M : traffic volume estimated by the model
C : actual (real-world) traffic volume

Where possible, the GEH for 85% of the estimated volumes should be less than 5, and ideally no estimated volumes should have a GEH greater than 10. The resulting GEH statistics from the calibration of the base network model for each peak period are shown in *Table **5***. In the micro-simulation modelling tasks done for this study, the estimated matrices were optimised in terms of its GEH as far as practical. Whilst there are a few GEH values above 10, they have been assessed individually and are considered acceptable.

Table 5: Summary of Paramics Estimation Results

Peak Period	Average GEH	GEH<5	5<=GEH<10	10<=GEH
Weekday AM Peak	1.81	182 (93%)	11 (6%)	2 (1%)
Weekday PM Peak	2.04	177 (91%)	17 (9%)	1 (1%)
Weekend MD Peak	2.11	177 (91%)	14 (7%)	4 (2%)
Weekend EV Peak	2.29	174 (89%)	16 (8%)	5 (3%)

The seed values that determine the release pattern of vehicles in the model were selected for each peak period based on the lowest GEH value for turning movements.

Table 6: Seed Values Selected for Each Peak Period

Peak Period	Seed Value
Weekday AM Peak	7771
Weekday PM Peak	2849
Weekend MD Peak	5321
Weekend EV Peak	28

3.3.3 Road Network Hierarchy Assessment

The road network in the study area, along with the hierarchy, is shown in *Figure* ***20***.

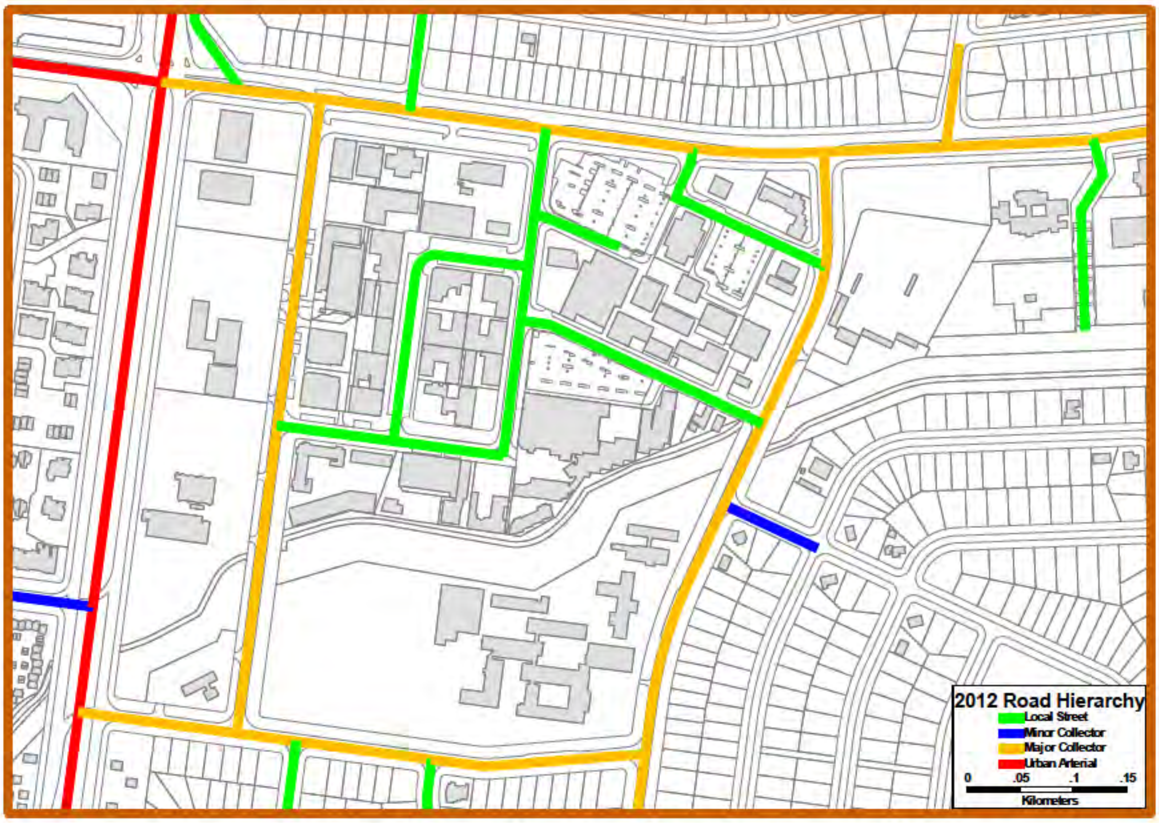

Figure 20: Study Area Road Network and Hierarchy (Source: TAMSD)

One of the criteria used by the ACT Residential Subdivision Code to define the road hierarchy is the average daily traffic in vehicles per day (vpd). This classification has been reproduced in *Table* ***7***.

Table 7 Classification of Roads in Hierarchy

Road Classification	Indicative Traffic Volume (vpd)
Local Access	0-1000
Local Access C	1001-2000
Minor Collector	1000-3000
Major collector	3000-6000

Source: ACT Residential Subdivision Code

Figure 21 provides an indication of daily weekday traffic volumes in 2012. These volumes were calculated by taking the AM and PM peak volumes from the micro-simulation modelling outputs and assuming a peak factor of 10% to determine the daily flow.

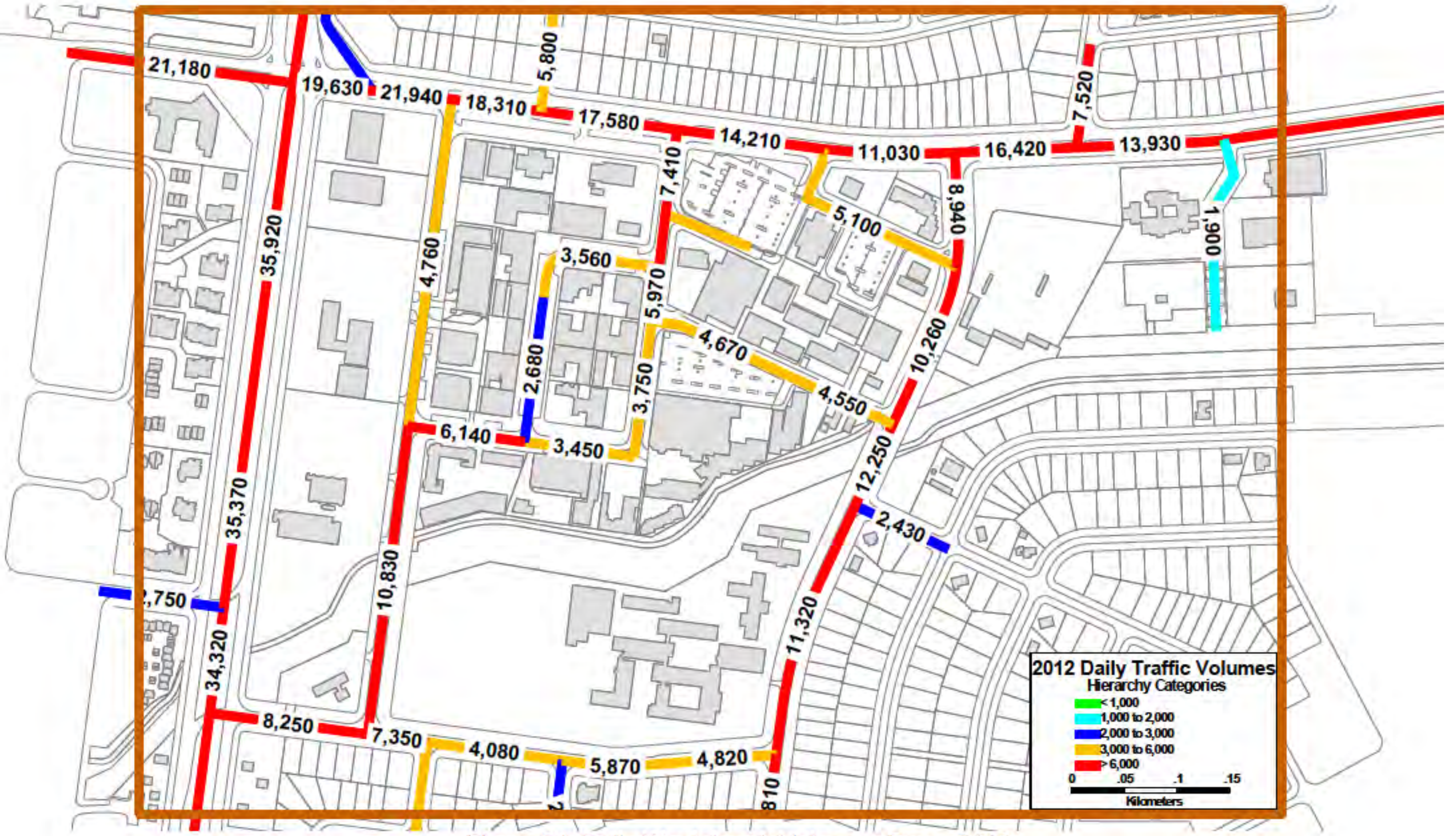

Figure 21: Daily Weekday Vehicles per Day – 2012

Figure 21 shows that, in 2012, the volumes on most roads are not appropriate for the classified road hierarchy. In particular, Antill Street, Cowper Street and Challis Street appear to have volumes that are not appropriate for their classification.

3.3.4 Intersection Analysis

Intersection analysis was conducted using SIDRA Intersection. Intersection performance measures such as Level of Service (from delay and degree of saturation) and queue length at the specified key intersections within the study area provided a quantitative basis on the performance of these major junctions in the four peak periods analysed. The Highway Capacity Manual (HCM) criteria for the evaluation of intersection Level of Service (LoS) are given in Table 8.

Table 8: HCM Level of Service Criteria (Average Control Delay D in Seconds)

Level of Service	Signalised/Roundabout	Stop/Give Way	Colour
A	D < 10s	D < 10s	
B	10s ≤ D < 20s	10s ≤ D < 15s	
C	20s ≤ D < 35s	15s ≤ D < 25s	
D	35s ≤ D < 55s	25s ≤ D < 35s	
E	55s ≤ D < 80s	35s ≤ D < 50s	
F	D ≥ 80s	D ≥ 50s	

Source: Highway Capacity Manual 2000, Exhibit 16-2 (p.16-2) and 17-2 (p.17-2)

The following 21 intersections were analysed:

- Northbourne Avenue - Antill Street / Mouat Street
- Northbourne Avenue Service Road - Antill Street
- Antill Street - Challis Street
- Antill Street - Badham Street
- Antill Street - Dickson Shops Access Road
- Antill Street - Cowper Street
- Antill Street - Rosevear Place
- Badham Street - Dickson Shop Access Road
- Cowper Street - Dickson Shop Access Road
- Badham Street - Woolley Street
- Badham Street - Dickson Place
- Cowper Street - Dickson Place
- Challis Street - Cape Street
- Cape Street - Woolley Street
- Cowper Street - Davenport Street
- Northbourne Avenue - Morphett Street
- Morphett Street - Challis Street
- Cowper Street - Morphett Street

Consistent with the survey periods, these intersections were modelled for the weekday AM, weekday PM, weekend midday and weekend evening peak periods. *Figure* ***22*** through *Figure* ***25*** show a graphical representation of the modelled performance of each intersection for each peak period in 2012. Detailed intersection analysis results for the current situation are shown in Appendix A.

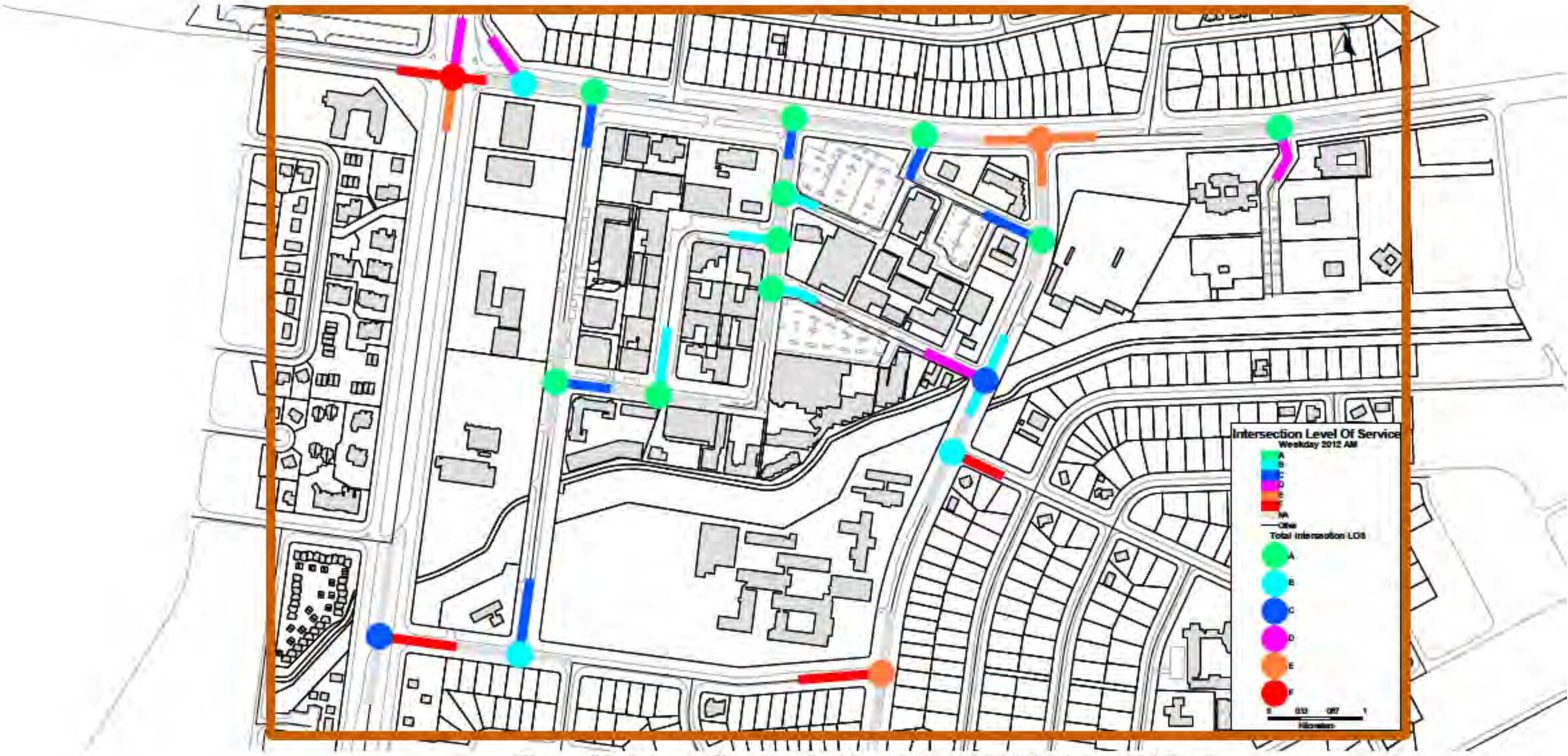

Figure 22: Intersection Level of Service – 2012 Weekday AM Peak

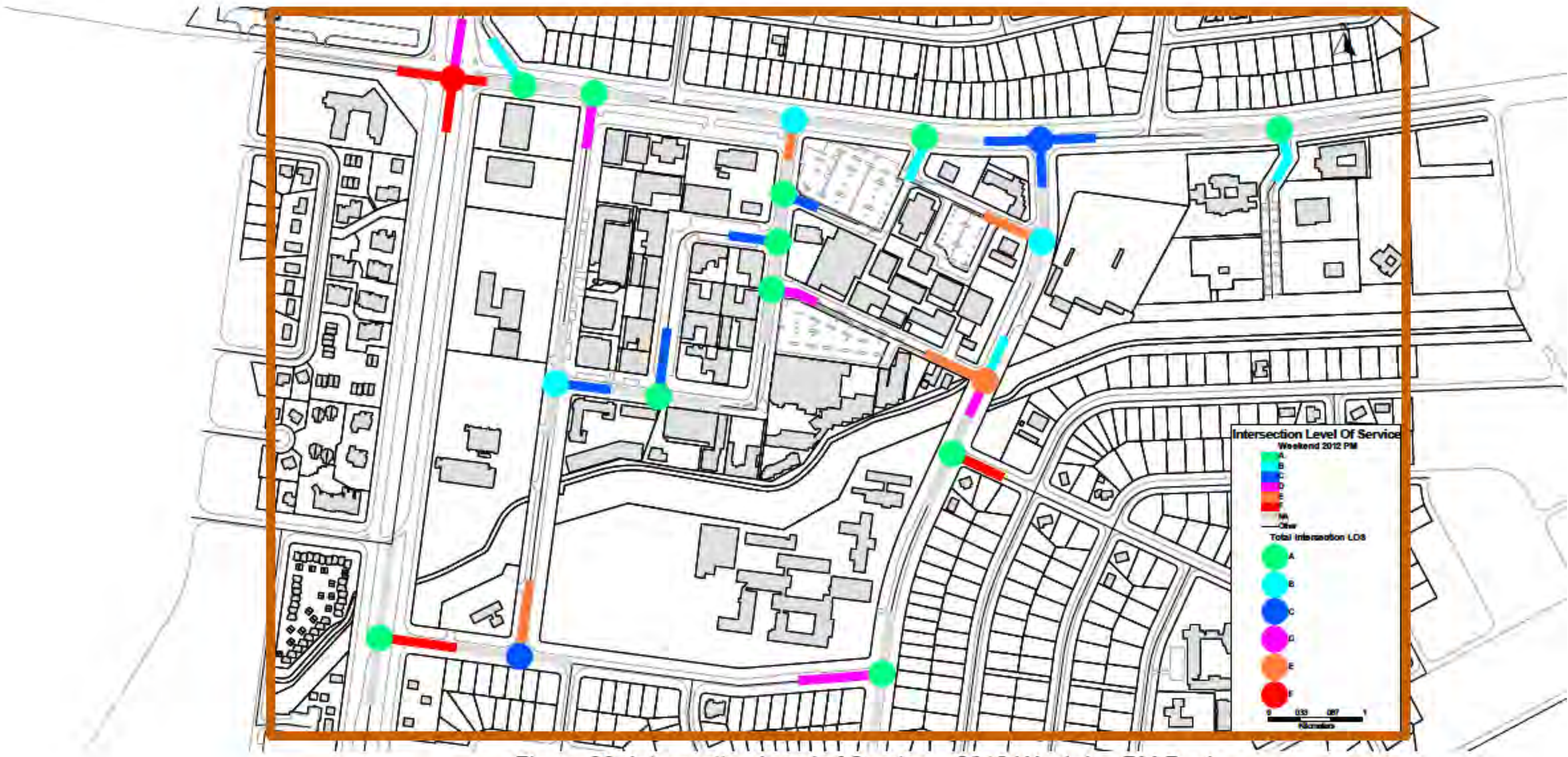

Figure 23: Intersection Level of Service – 2012 Weekday PM Peak

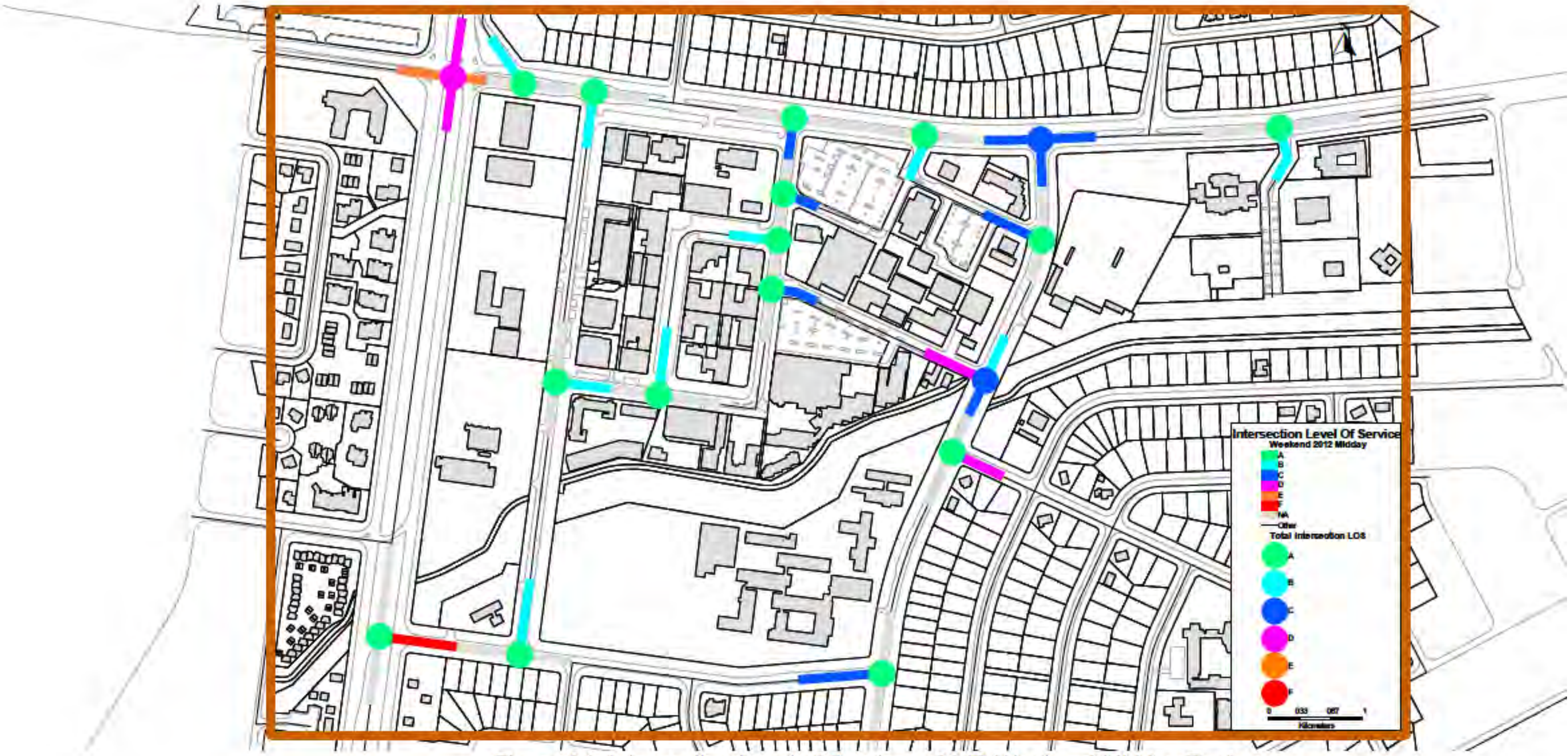

Figure 24: Intersection Level of Service – 2012 Weekend Midday Peak

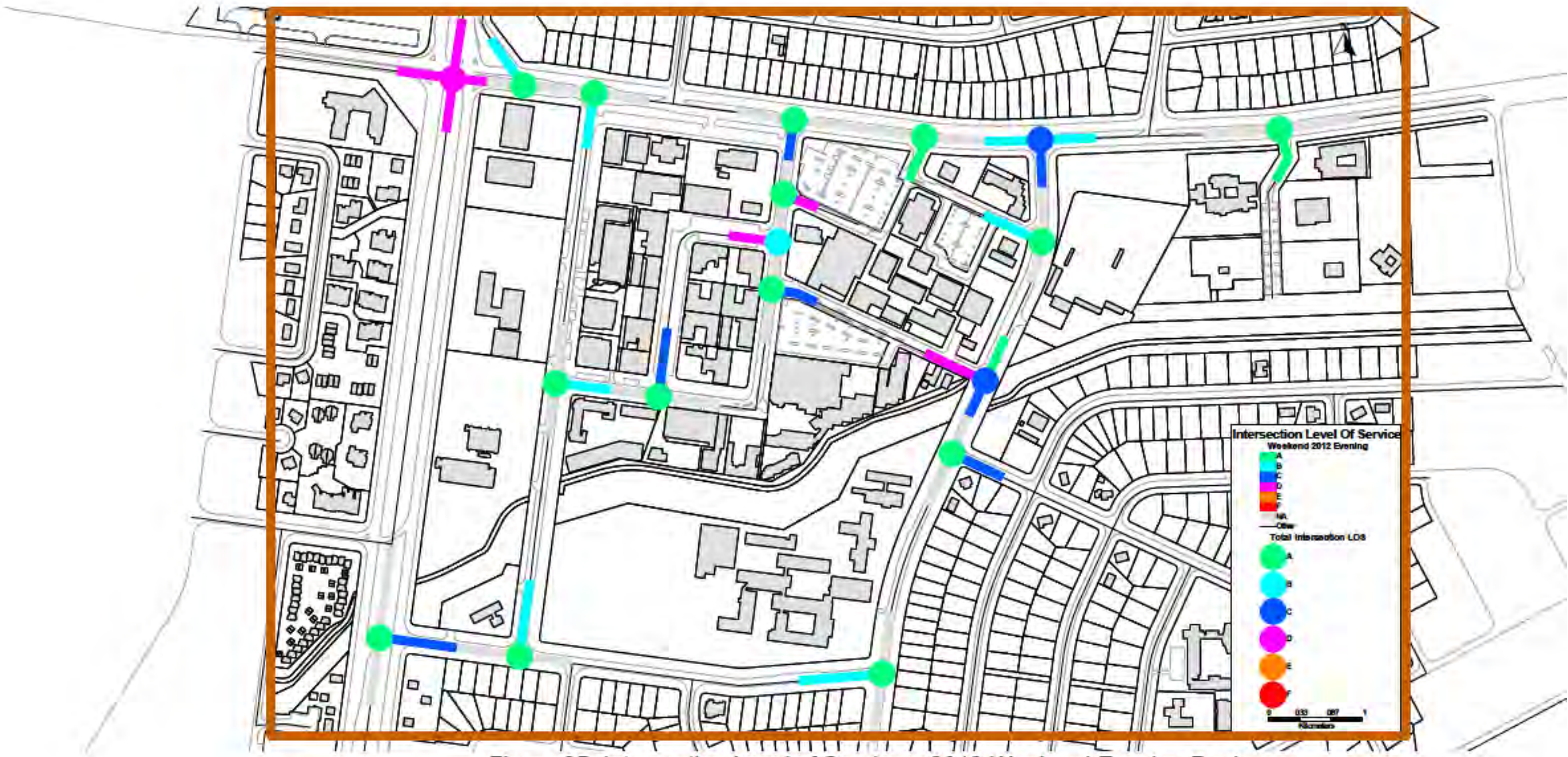

Figure 25: Intersection Level of Service – 2012 Weekend Evening Peak

The results of the intersection analysis show that there are some areas of concern in the current network, especially in the weekday AM and PM peaks. In the weekday AM peak, the intersection of Northbourne Avenue with Mouat Street and Antill Street is expected to operate at LoS F, with both Mouat Street and Antill Street operating at LoS F. In addition, the following roads are expected to operate at LoS F:

- Morphett Street, at its intersection with Northbourne Avenue

- Morphett Street, at its intersection with Cowper Street
- Davenport Street, at its intersection with Cowper Street

In the weekday PM peak, the following locations are expected to operate at LoS F:

- Intersection of Northbourne Avenue with Mouat Street and Antill Street, on Northbourne Avenue (northbound), Mouat Street and Antill Street approaches
- Morphett Street, at its intersection with Cowper Street
- Davenport Street, at its intersection with Cowper Street

During the weekend midday peak, the only area operating at LoS F is Morphett Street, at its intersection with Northbourne Avenue.

There are no intersections or approaches to intersections operating at LoS F in the weekend evening peak period.

3.4 Summary of Existing Issues and Potential Solutions

*Figure **26*** shows the recommended changes in the Dickson Precinct to address the identified issues in the current situation.

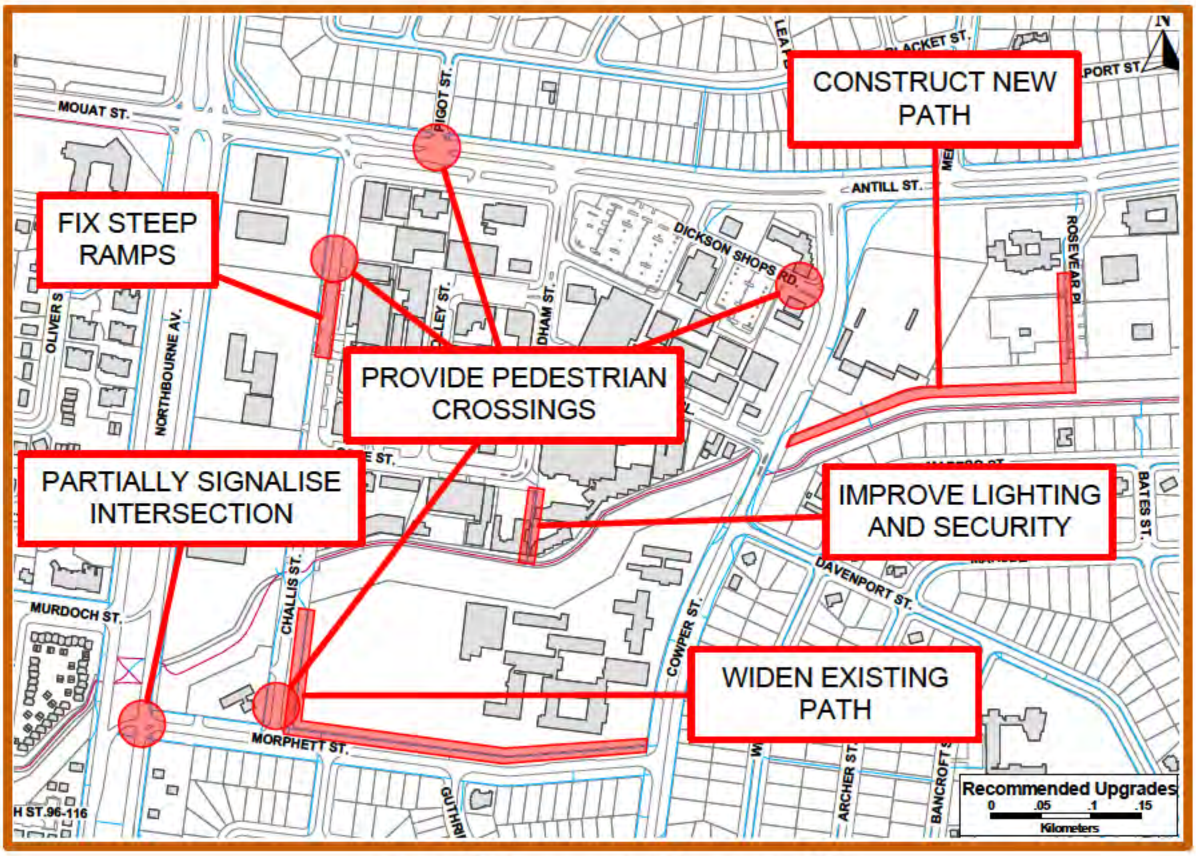

Figure 26: Recommended Upgrades in 2012

These recommendations are discussed in more detail in the following sections.

3.4.1 Pedestrian and Cyclist Facilities

The following changes to the existing pedestrian and cyclist facilities, based on the site inspection, are recommended:

- Provide a pedestrian crossing on Challis Street near its intersection with Morphett Street

- Provide a pedestrian crossing on Challis Street near the Telstra Building
- Provide a pedestrian crossing on Antill Street near its intersection with Pigot Street in the short term
- Provide a pedestrian crossing on Dickson Shops Road close to the intersection with Cowper Street
- Widen the 1.2m concrete paths around Daramalan College to 2.0m wide
- Provide better lighting on the path extension from Badham Street to the shared path to the south of the precinct to improve security
- Ensure pedestrian ramps along Challis Street have appropriate steepness for wheelchair access.
- Construct a new pedestrian/cyclist path connection from north of Rosevear Place to shared path to the south and swimming pool

3.4.2 Car Parking

The analysis of the car parking supply and utilisation has shown that there appears to be sufficient car parking capacity in Dickson for current operations. However, the car parking is not evenly utilised across the centre. It is recommended that appropriate signage be implemented to direct drivers to car parks that are shown to be underutilised in this study. The large car parks that are currently underutilised are:

- Dickson pool car park (this is likely to be variable with weather and season)
- Surface car park on the southern side of Dickson Place
- Underground car park underneath Dickson Tradies Club

Better signage, along with the upgrades to the pedestrian facilities presented above, should allow more efficient usage of current parking facilities.

3.4.3 Road Network and Intersections

The following changes to the existing road network and intersections are recommended to address current performance issues:

- Partial signalisation of the intersection of Northbourne Avenue and Morphett Street

This signalisation would only affect the eastern (southbound) carriageway of Northbourne Avenue. The signals would need to be linked to the existing signalised pedestrian crossing immediately to the north to ensure efficient operation.

These signals would also allow safe crossing of Morphett Street for pedestrians and off-road cyclists travelling north or south along the eastern side of Northbourne Avenue.

While the intersection analysis results indicate that the intersection of Northbourne Avenue with Antill Street and Mouat Street is currently operating at Level of Service F in both the AM and PM peak periods, it is recommended that the *Gungahlin to City Transitway Feasibility Study* (currently in progress) investigate options to improve the performance at this location. That study is expected to recommend significant changes to Northbourne Avenue to address transit operations and is better placed to make recommendations about this intersection.

4 ASSESSMENT OF MASTER PLAN

The proposed master plan developments have been discussed here in two stages. The first is the short term plan to develop Blocks 19 and 21 into two new supermarkets with supporting specialty retail shops. The predicted traffic impact of this development has already been assessed by Brown Consulting in 2011 and the outcomes of that assessment are reviewed here. An in depth analysis, which would essentially duplicate work already undertaken, has not been carried out.

The second stage of the assessment is the long term master plan options, assumed to be implemented by 2031. A more detailed analysis of the long term has been carried out, including traffic modelling and an indicative forecast of future parking requirements.

4.1 Analysis of Short Term Plan

Brown Consulting has already conducted an in depth analysis of the impact of an indicative level of development for the proposed supermarket sites, which found that the developments were not expected to have a significant impact on traffic operations in the area.

Based on the indicative level of development assumed by Brown Consulting and the *ACT Parking and Vehicular Access General Code* parking provision requirements, an extra 326 parking spaces would be required. Additionally, replacement of the existing spaces removed by the development would be required. The following section discusses a brief review of the parking analysis shown in *Development Traffic Assessment Report for Block 19 and 21, Dickson Shops, Dickson, ACT* (Brown Consulting, June 2011) based on more recent parking utilisation surveys carried out for this project.

4.1.1 Short Term Parking Requirements During Construction

The Dickson master plan indicates that parking Areas 16 and 19 are expected to be redeveloped with supermarkets and supporting specialty shops. These parking areas are located in Block 21 and Block 19, respectively.

Table **9** shows the existing utilisation of the parking Areas 16 and 19 (Blocks 21 and 19). It should be noted that parking areas in the Retail Core Precinct are currently near capacity during the weekday PM peak and weekend midday peak periods. Car parking areas operating at very high utilisation levels typically have a large number of cars circulating repeatedly searching for spaces, which could potentially lead to traffic congestion issues.

Table 9 Summary of Parking Utilisation Survey for Parking Areas 16 and 19

Location	Supply	Thursday, 16 February 2012						Weekend, 18 February 2012					
		7:00	8:00	9:00	16:00	17:00	18:00	11:00	12:00	13:00	18:00	19:00	20:00
Area 16 (Block 21)	242	23	102	116	182	180	191	195	233	228	159	193	177
Area 19 (Block 19)	135	21	36	72	112	69	44	113	123	124	26	32	27
Total	**377**	**44**	**138**	**188**	**294**	**249**	**235**	**308**	**356**	**352**	**185**	**225**	**204**
		12%	**37%**	**50%**	**78%**	**66%**	**62%**	**82%**	**94%**	**93%**	**49%**	**60%**	**54%**

Table **9** shows that Block 21 has a total of 242 parking spaces and block 19 has a total of 135 parking spaces (including taxi zone and motorcycle parking areas). This table also shows that the peak parking demand of Areas 16 and 19 is 356 vehicles and occurs at 12:00 PM on weekends, which is the same as the adjacent parking areas in the Retail Core Precinct.

Temporary removal of either of these parking areas will put significant parking pressure on adjacent parking areas and the surrounding road network as consumers search for parking spaces, so this demand should be met through the use of adjacent parking areas and temporary car parks.

It is expected that some of the parking demand from Areas 16 and 19 will be absorbed by the adjacent parking areas during the construction period. After construction is complete, the developments are expected to replace the existing parking supply and provide whatever additional capacity is required by the new development. The *ACT Parking and Vehicular Access General Code* requires that, in Commercial 'C' areas in Group Centres like Dickson, short stay parking may be provided on-site or within 200 metres of a development, while long stay parking may be provided on-site or within 400 metres of a development. The dispensation to allow provision of parking off-site depends on there being spare capacity in existing publicly provided parking spaces, whether on-street or off-street. Therefore, the most likely existing parking areas to be utilised are Areas 8, 9, 10, 12, 17 (McDonalds 30 minute parking), 18, 20 and 23. While Area 12 is in a location that makes it possible to be utilised, its on-street nature is likely to make it less attractive to supermarket shoppers who often use trolleys to transport goods to their cars. *Table* ***10*** shows the number of unused parking spaces in nearby parking areas. It is also noted that demand for parking in Area 23 is likely to be seasonal. The parking surveys were conducted in February and the area is approximately 65% utilised during the weekend midday peak. During winter, when the Aquatic Centre is closed, there is likely to be less demand in this area.

Table 10: Available Parking Space in Areas near Blocks 19 and 21

Parking Area	Thursday, 16 February 2012						Weekend, 18 February 2012					
	7:00	8:00	9:00	16:00	17:00	18:00	11:00	12:00	13:00	18:00	19:00	20:00
Area 8	53	28	10	25	44	59	60	56	55	62	41	17
Area 9	30	28	27	16	23	21	18	12	17	6	1	1
Area 10	58	55	52	50	47	43	44	37	38	22	18	17
Area 12	128	130	116	78	63	31	38	32	26	24	20	20
Area 17	17	13	10	6	11	15	19	16	14	21	23	7
Area 18	36	23	13	4	12	34	16	25	31	31	35	35
Area 20	119	102	80	47	63	40	7	13	7	74	13	5
Area 23	156	152	125	54	128	137	53	49	59	152	176	181
Total Available Spaces	**597**	**531**	**433**	**280**	**391**	**380**	**255**	**240**	**247**	**392**	**327**	**283**

Based on the available parking spaces around Blocks 19 and 21, it appears that Block 19 (which contains 135 parking spaces) can be redeveloped without the need to provide additional parking during construction. However, appropriate signage must be used to redirect users to the parking areas they should use while construction is underway.

If the development of Block 21 (which contains 242 parking spaces) can be staged, additional temporary parking spaces may not be required. If staging is not possible for Block 21, it is recommended to provide temporary parking spaces as close to Area 16 as is feasible.

It is noted that there will be an increase in circulating traffic caused by drivers looking for free spaces in highly utilised parking areas. To reduce this impact it is recommended to install temporary signs directing drivers to alternative parking areas (particularly for Area 23). It is expected that this work will be conducted as part of the temporary traffic management plan.

4.2 Analysis of Long Term Master Plan

The impacts of the master plan developments on transport operations in Dickson were assessed, regarding:

- Pedestrian and cycle network
- Car parking requirements
- Road hierarchy
- Intersection level of service

These investigations are discussed further in the following sections.

4.2.1 Pedestrian and Cycle Network

Figure 5 to *Figure* ***8*** show that Dickson appears to have significant east-west pedestrian and cyclist movements. However, the main north-south movements occur on Northbourne Avenue only. This is likely to be due to lack of appropriate pedestrian crossings on Antill Street and Morphett Street. It is noted that the one signalised crossing at the intersection of Antill Street and Dickson Shops Road carries relatively less pedestrian and cyclists compared to the other crossing facilities surrounding Dickson. For the long term scenario it is recommended to increase the north-south permeability of the precinct by improving the crossing facilities that provide access to the centre of Dickson. This can be achieved by signalising the Antill Street – Badham Street intersection, and improving access from Badham and Cape Streets to the shared path north of Daramalan College. In addition, pedestrian access from the south can be improved by signalising the intersection of Morphett Street and Challis Street and continuing the paved path on the western end of Daramalan College.

The master plan proposes several external connections to the surrounding area as shown in *Figure* ***27*** . These external connections are consistent with the recommendations made above. Similarly, the master plan proposes new internal links and improvements to the existing links as shown in *Figure* ***28***. The new east-west internal links will allow better access to Challis Street, which will be very important if the planned major bus station is located along this street.

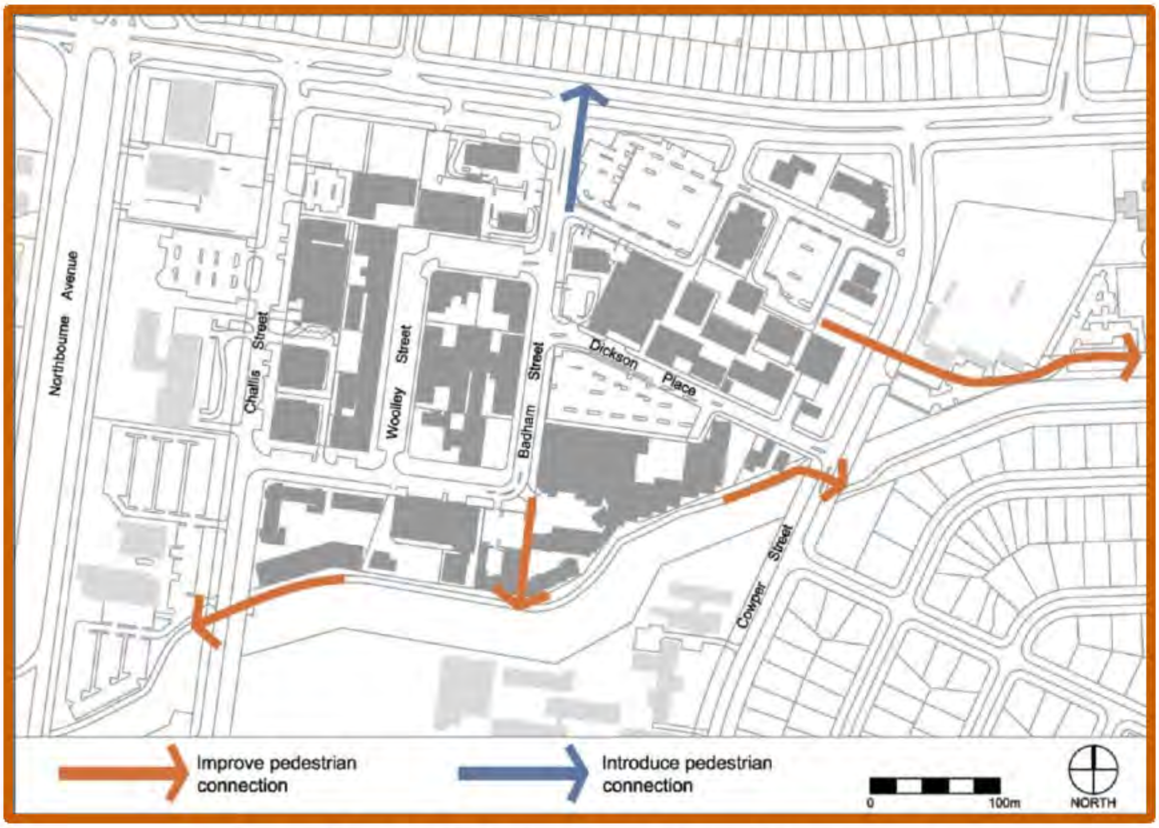

Figure 27: External Pedestrian Access (Source: Dickson master plan)

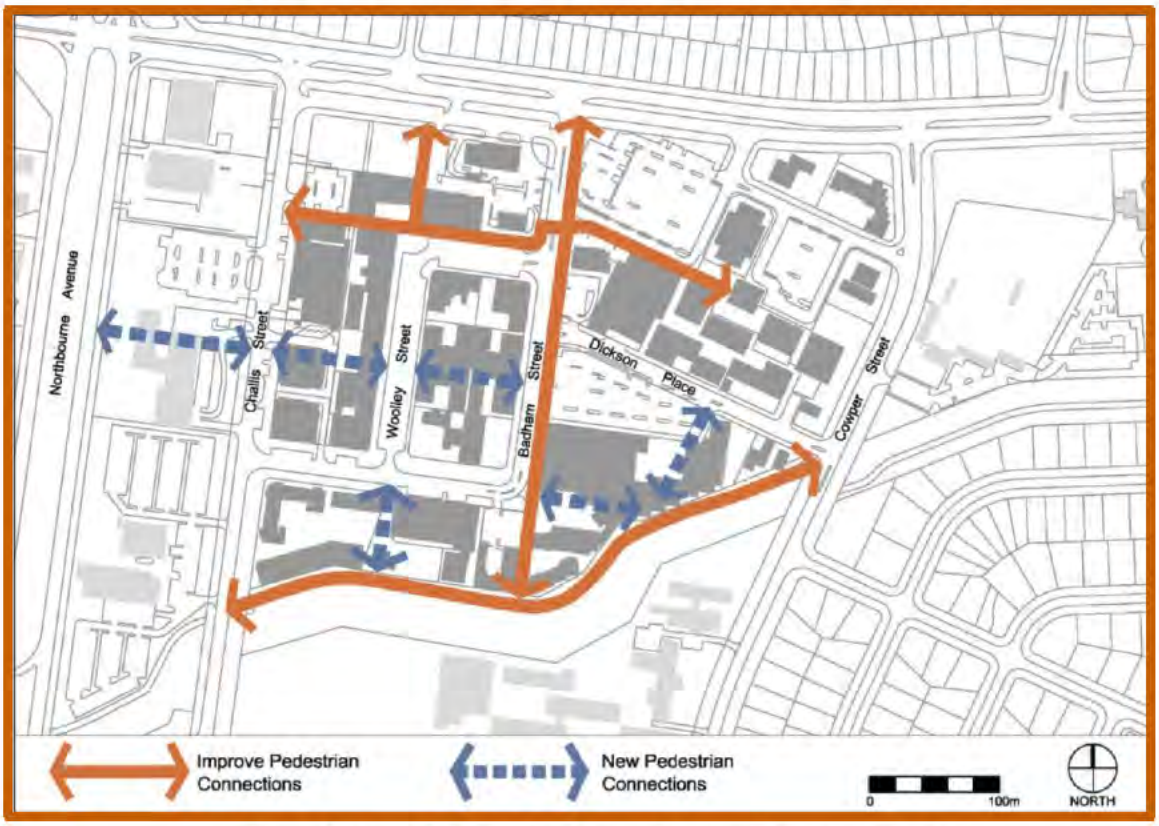

Figure 28: Internal Pedestrian Access (Source: Dickson master plan)

4.2.2 Long Term Parking Requirements

The master plan does not include enough details regarding the proposed land use to conduct an accurate assessment of the number of parking spaces required in the future.

However, a basic assessment has been carried out based on the indicative changes in land use shown in *Table **11***.

Table 11: Indicative Future Land Use in Dickson

Land Use	2016	2021	2031 (Without Master Plan)	2031 (With Master Plan)
Population	101	250	280	1,890
Employment	2,880	3,306	3,329	4,590
Retail Space (m^2)	31,945	34,130	36,000	40,800

Using current parking provision rates and making assumptions about residential unit occupancy and employment rates per square metre of commercial development, the Dickson Group Centre is expected to require approximately the number of parking spaces shown in *Table **12***.

Table 12: Indicative Future Parking Requirements in Dickson

Land Use	2012	2016	2021	2031 (Without Master Plan)	2031 (With Master Plan)
Population	-	90	220	250	1,670
Employment	-	1,440	1,650	1,660	2,300
Retail Space (m^2)	-	1,600	1,710	1,800	2,040
Total	**2,509**	**3,130**	**3,580**	**3,710**	**6,010**

Based on rates from the ACT Parking and Vehicular Access General Code and assumptions about residential unit occupancy and employment rates.

This is an increase to nearly 2.5 times the current supply if the master plan is implemented. It is assumed that the parking associated with population (residential) and employment will be contained within individual developments and will not be publicly accessible. The parking associated with retail development should be accessible to the general public.

The large increase in vehicles entering and exiting the Dickson Precinct to use this parking may have a significant impact on the performance of the road network and intersections in and around Dickson.

It is also noted that the 2031 scenario without the master plan (i.e. the do nothing scenario) includes some development and population, employment and retail space are all expected to increase. The master plan allows for higher levels of development, especially in residential and employment numbers.

4.2.3 Road Network Hierarchy Assessment

*Figure **29*** and *Figure **30*** show that the indicative road hierarchies (based only on traffic volumes) in 2031, both with and without master plan scenarios, are very similar.

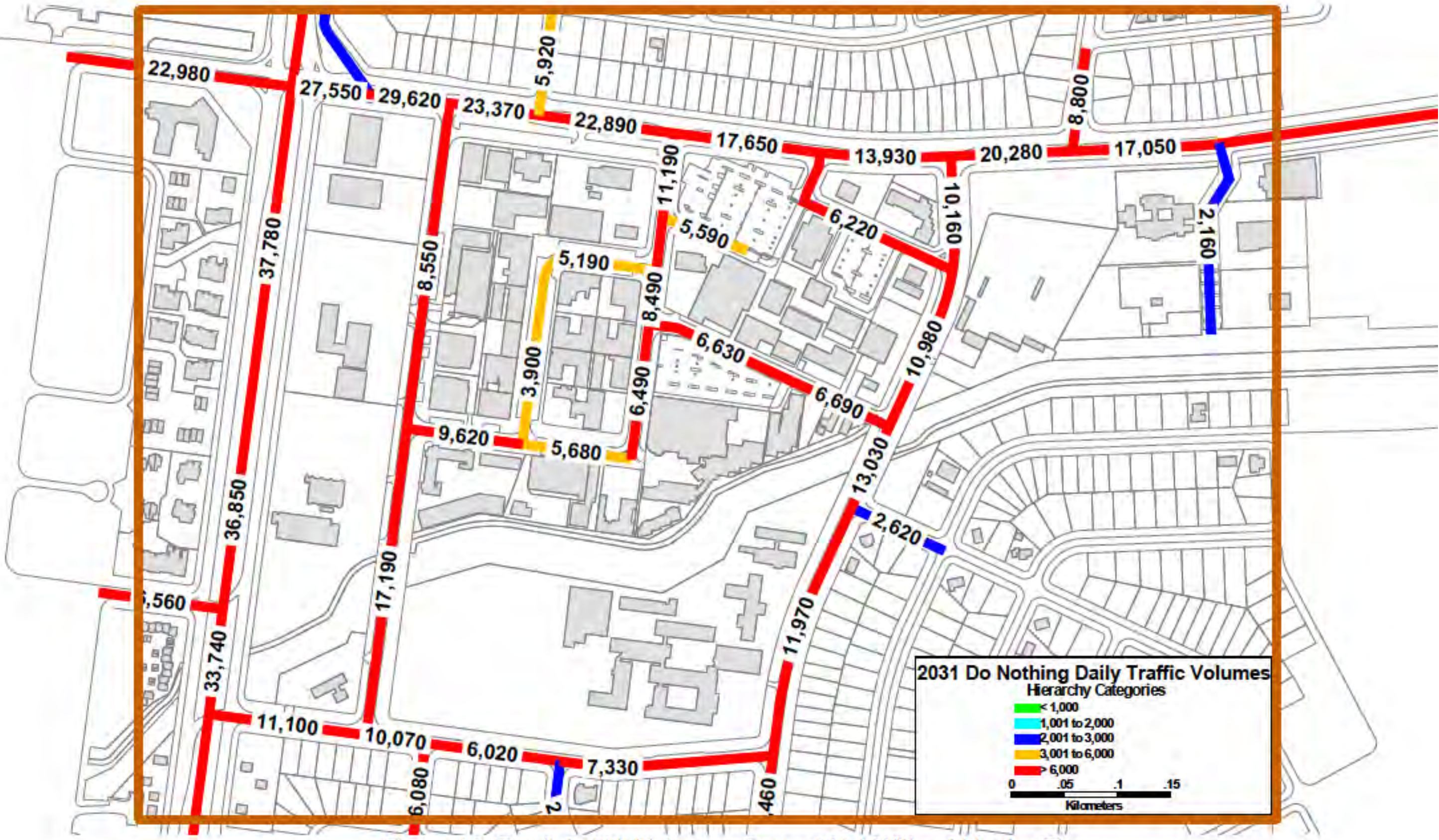

Figure 29: Predicted Vehicles per Day – 2031 Without Master Plan

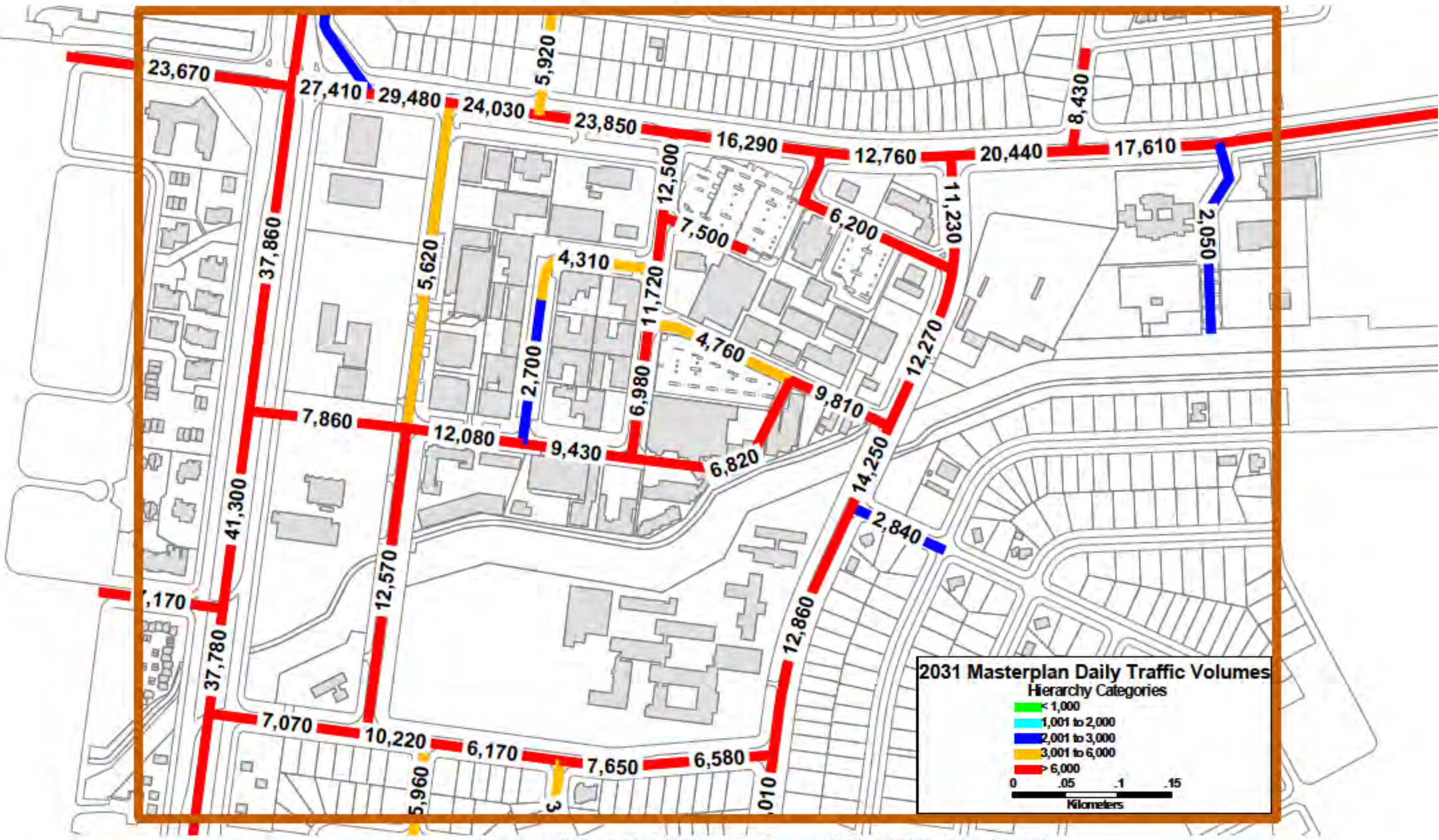

Figure 30: Predicted Vehicles per Day – 2031 With Master Plan

Figure **29** shows that even in the do nothing scenario, there is expected to be an increase in development and thus, an increase in traffic.

Cape Street Extension, east of Badham Street, is expected to carry approximately 6,800 vehicles per day. West of Challis Street, Cape Street Extension is expected to carry

7,800 vehicles per day, which places it in the arterial category, based on traffic volumes. However, the daily traffic volumes shown here are indicative and the code allows for some flexibility in road hierarchy planning. It is recommended that Cowper Street and Antill Street be upgraded to arterial roads while Cape Street and Badham Street should become major collectors. Challis Street and Morphett Street are likely to remain as major collectors.

Figure ***31*** shows the expected differences in daily traffic volumes in 2031 if the master plan is implemented.

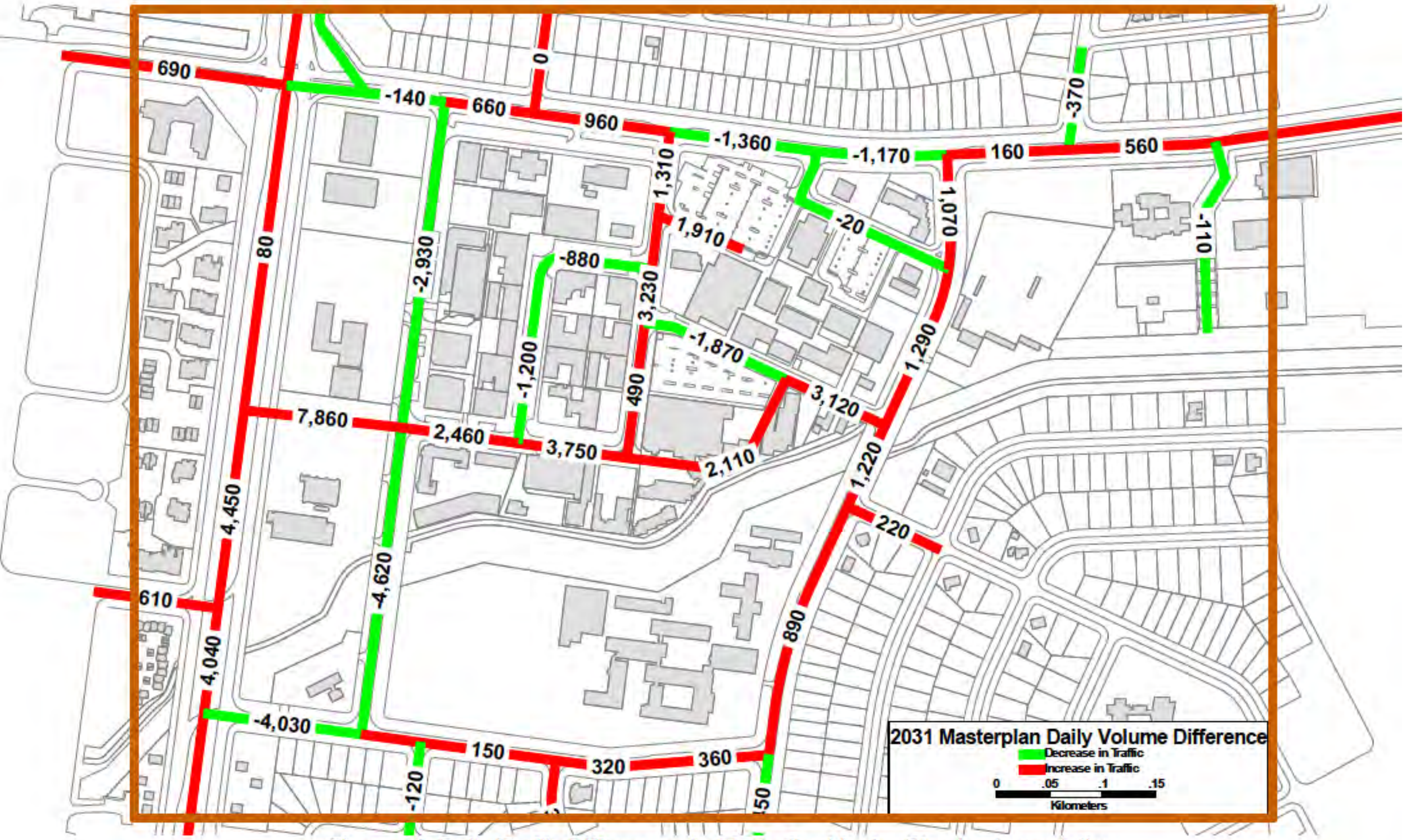

Figure 31: Daily Traffic Differences in 2031 after Master Plan Implementation

The major reductions in traffic are on Challis Street and Morphett Street. This is mainly due to the Cape Street extension to Northbourne Avenue. Similarly, there is a reduction on Antill Street between Cowper Street and Badham Street which appears to be due to the extension of the eastern end of Cape Street to Dickson Place. Small increases in traffic are noted on Mouat Street, Antill Street (east of Cowper Street) and Murdoch Street.

While access arrangements appear to be appropriate for the proposed hierarchy, as more traffic travels on Dickson Place, Badham Street and Cape Street, the access arrangements to developments on these streets may need to be reconsidered. Of particular note are the:

- Woolworths loading dock at the western end of Dickson Place
- 90 degree parking on Cape Street

These facilities may not be appropriate for the relatively high volumes of traffic expected on these roads.

4.2.4 Intersection Analysis

In addition to the 21 intersection that were analysed in Section 3.3.4, the following three intersections, related to the extension of Cape Street at both the eastern and western ends, were analysed for the master plan scenario:

- Northbourne Avenue - Cape Street
- Cape Street - Badham Street
- Dickson Place - Cape Street

Again, these intersections were modelled for the weekday AM, PM and Weekend mid-day and evening peak periods using volumes taken from the micro-simulation modelling. ***Figure 32*** through ***Figure 35*** show a graphical representation of the expected performance of each intersection for each of the four peak periods in 2031, assuming that the master plan developments do not go ahead. Detailed intersection analysis results for the future scenarios are shown in Appendix A.

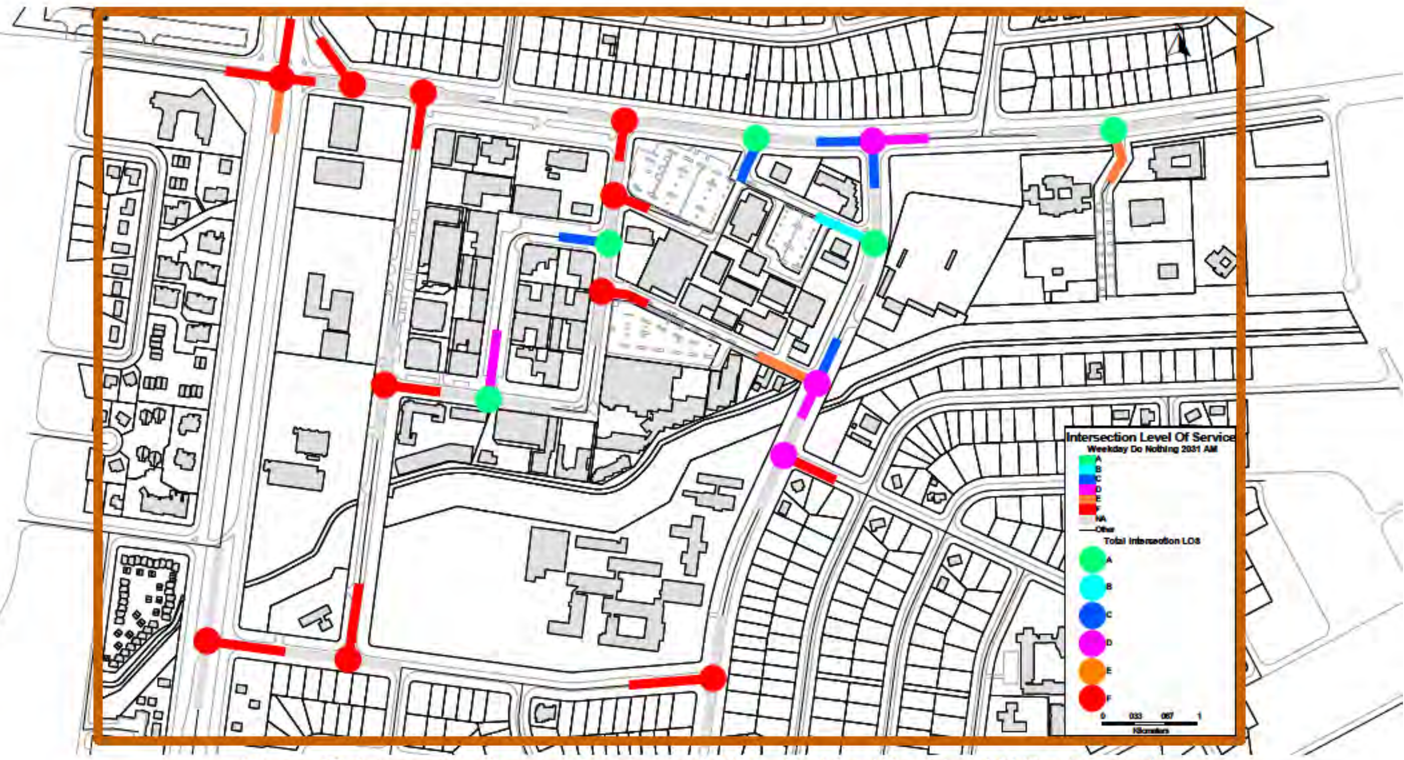

Figure 32: Intersection Level of Service – 2031 Do Nothing Weekday AM Peak Period

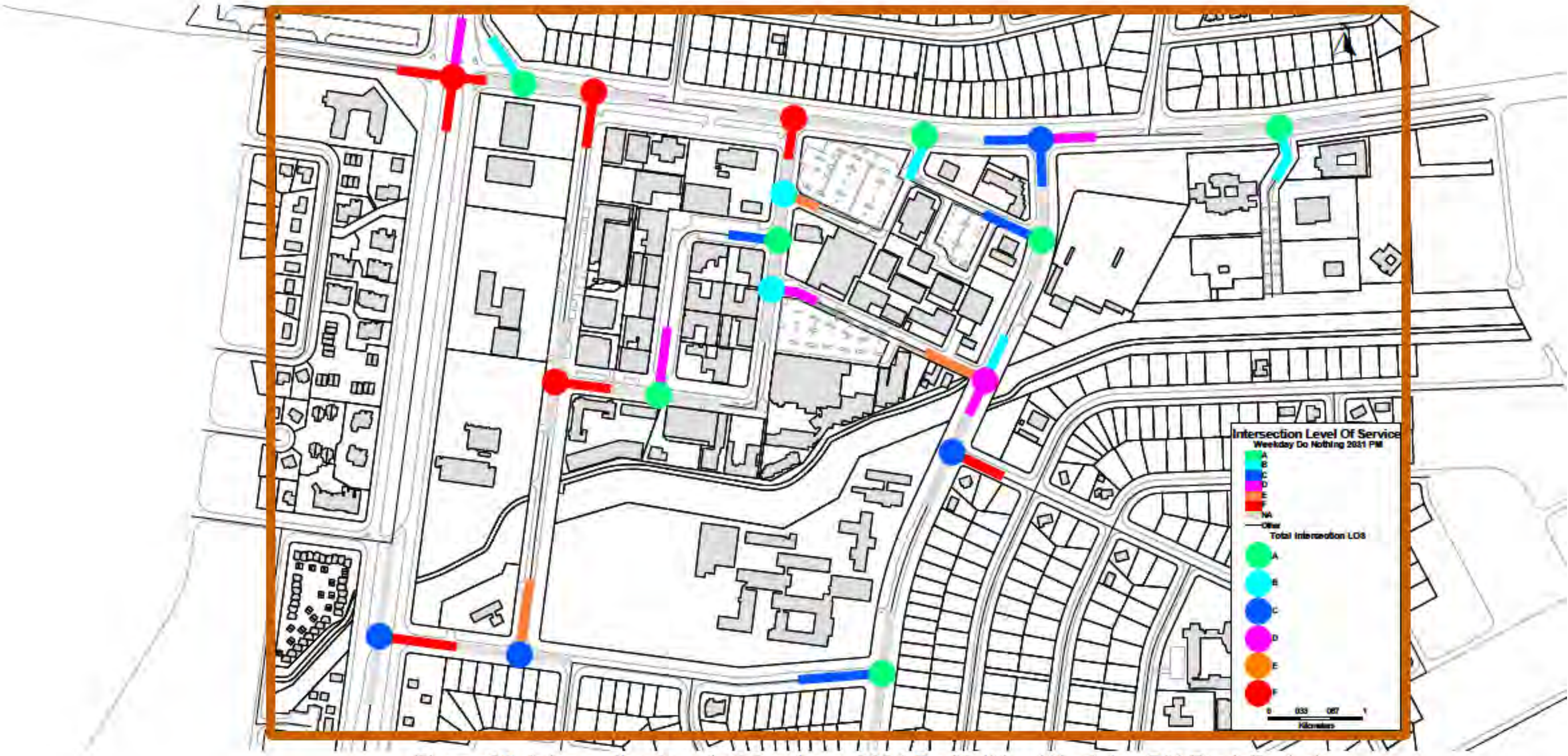

Figure 33: Intersection Level of Service – 2031 Do Nothing Weekday PM Peak Period

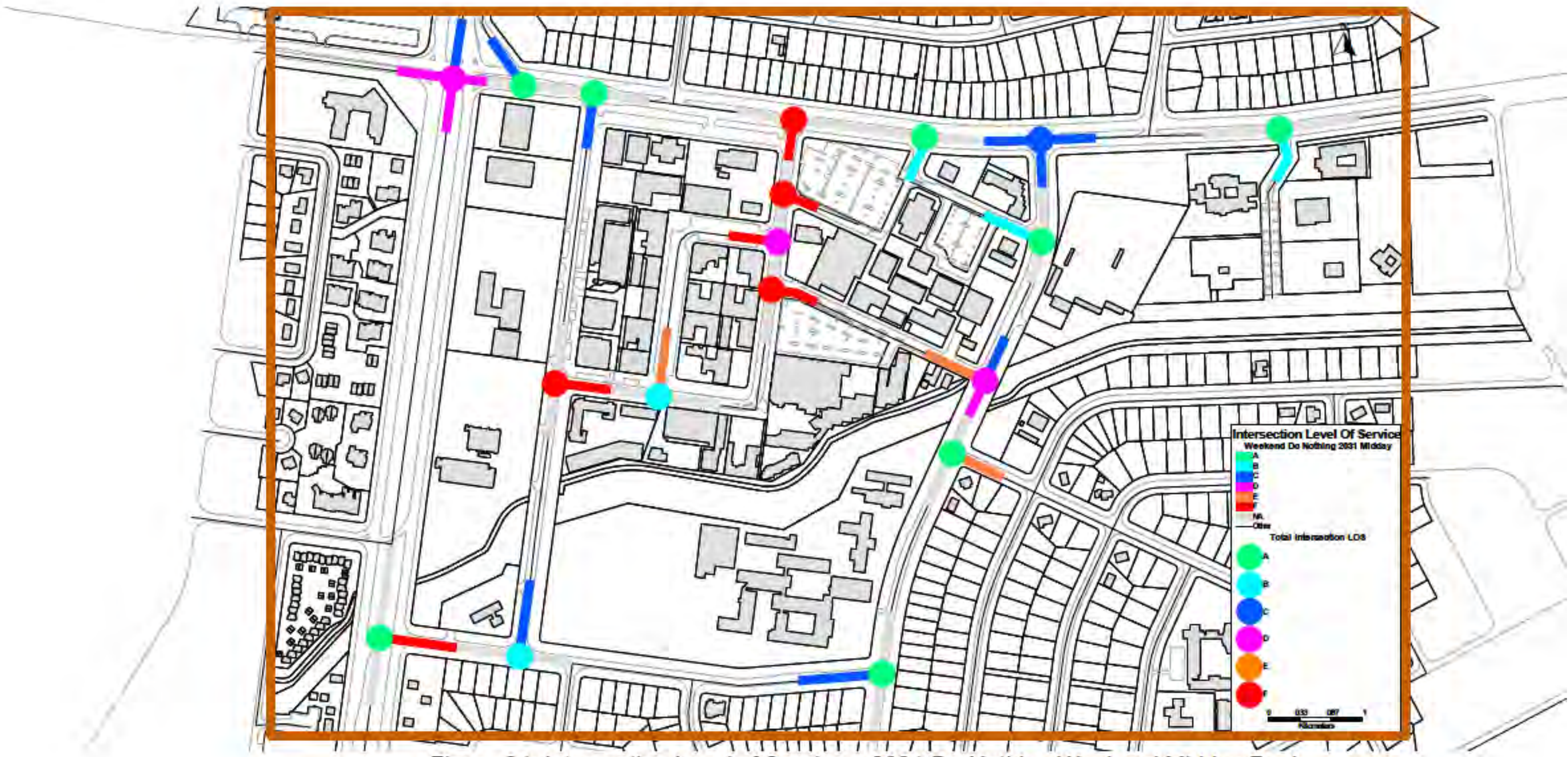

Figure 34: Intersection Level of Service – 2031 Do Nothing Weekend Midday Peak

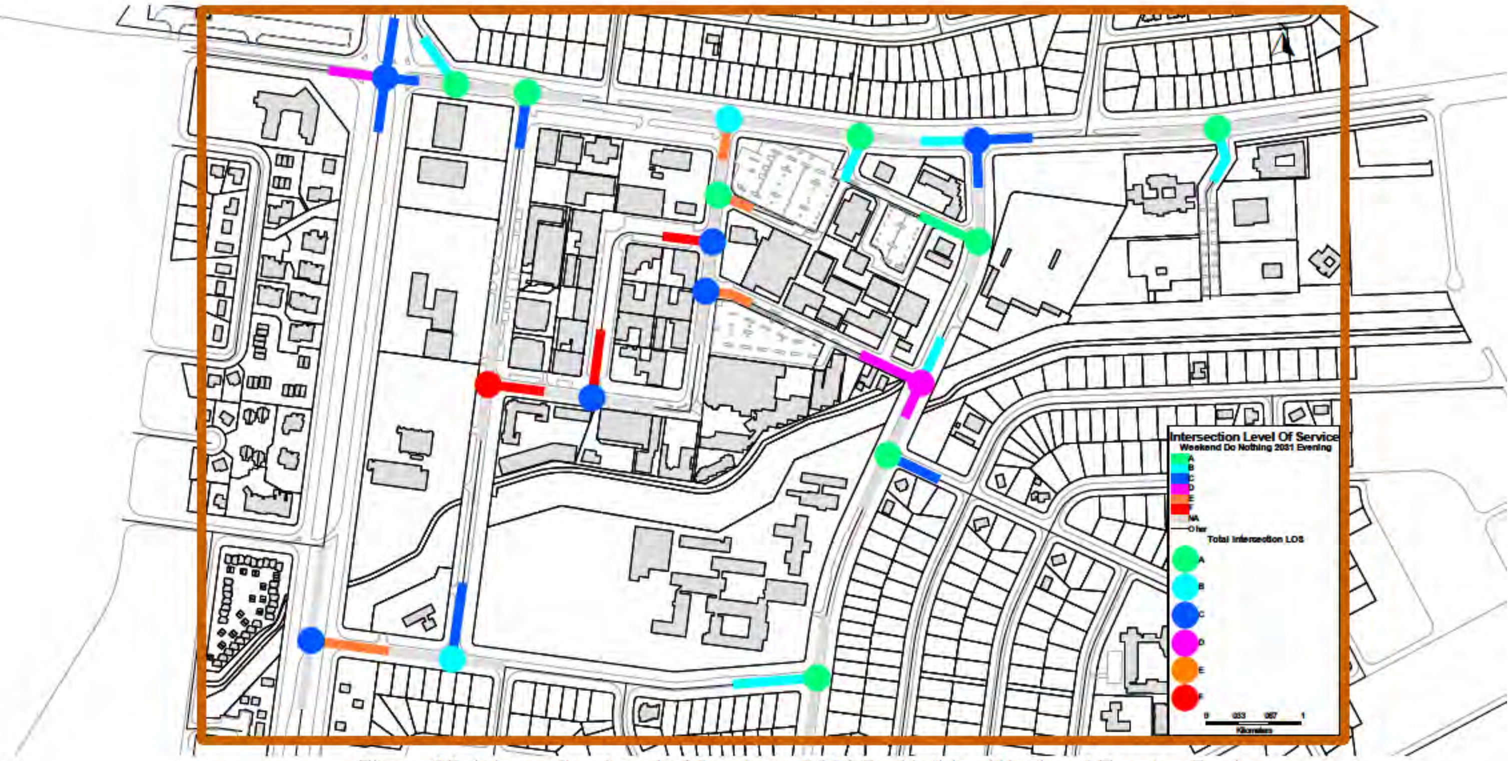

Figure 35: Intersection Level of Service – 2031 Do Nothing Weekend Evening Peak

From the preceding figures, it can be seen that there are a number of intersections and links that are expected to operate at Level of Service F without the master plan developments. The intersections include:

- Northbourne Avenue – Antill Street / Mouat Street (AM and PM peaks)
- Northbourne Avenue – Morphett Street (AM peak)
- Antill Street – Northbourne Avenue Service Road (AM peak)
- Antill Street – Challis Street (AM and PM peaks)
- Challis Street – Cape Street (AM, PM, weekend midday and weekend evening peaks)
- Challis Street – Morphett Street (AM peak)
- Antill Street – Badham Street (AM, PM and weekend midday peaks)
- Badham Street – Dickson Shops Road (AM and weekend midday peaks)
- Badham Street – Dickson Place (AM and weekend midday peaks)
- Cowper Street – Morphett Street (AM peak)

In addition to these intersections, the following roads are expected to operate at Level of Service F:

- Davenport Street, at its intersection with Cowper Street (AM and PM peaks)
- Morphett Street, at its intersection with Northbourne Avenue (PM and weekend midday peaks)
- Woolley Street, at its intersection with Badham Street (weekend midday and weekend evening peaks)
- Woolley Street, at its intersection with Cape Street (weekend evening peak)

The operation of these intersections worsens in the future for two reasons. The first is that, even in the do nothing scenario, there is expected to be development in Dickson, as discussed in Section 4.2.2. The second reason is that the traffic growth has been taken from a strategic model that includes all of Canberra. As development occurs in other parts of Canberra, traffic along major roads across Canberra is expected to increase.

*Figure **36*** through *Figure **39*** show a graphical representation of the expected performance of each intersection for each of the four peak periods in 2031, assuming that the master plan developments go ahead. Detailed intersection analysis results for the future scenarios are shown in Appendix A.

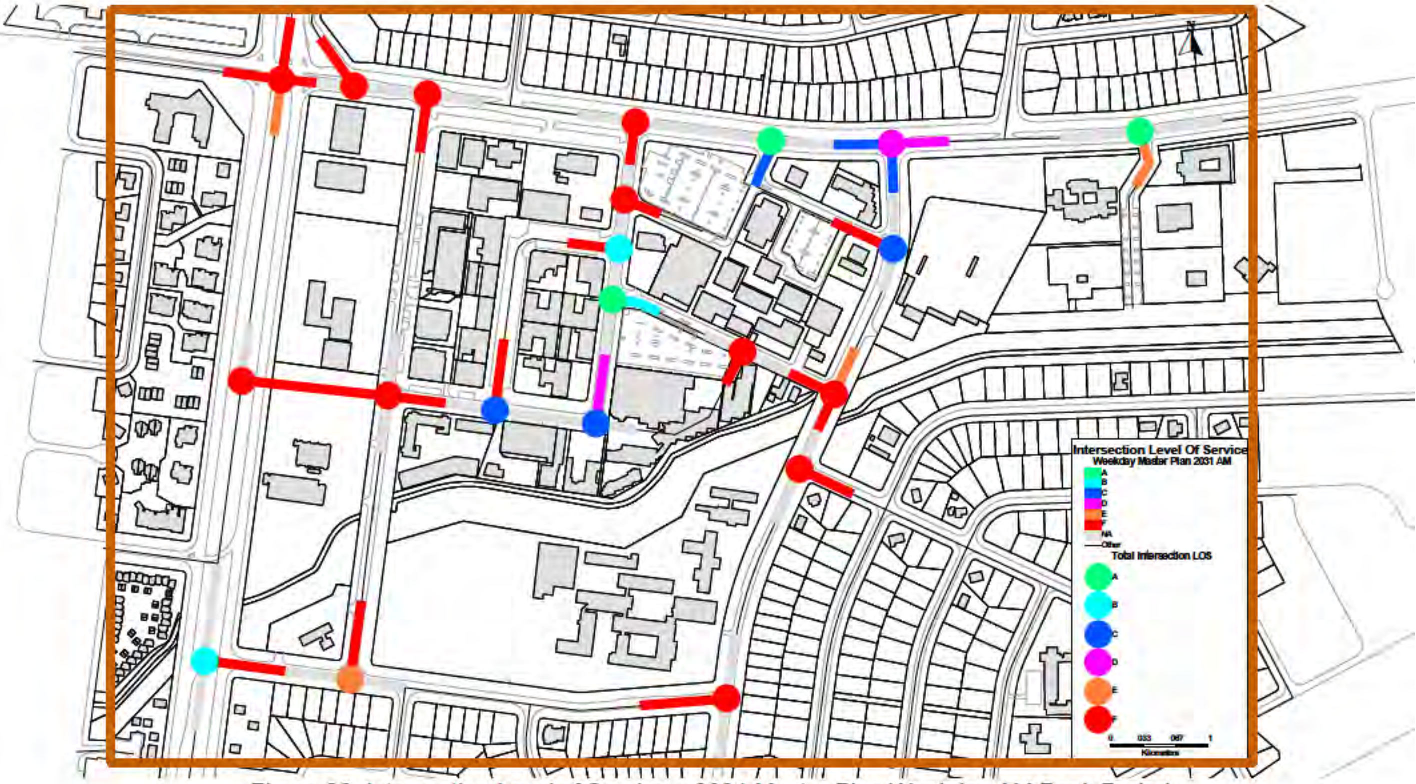

Figure 36: Intersection Level of Service – 2031 Master Plan Weekday AM Peak Period

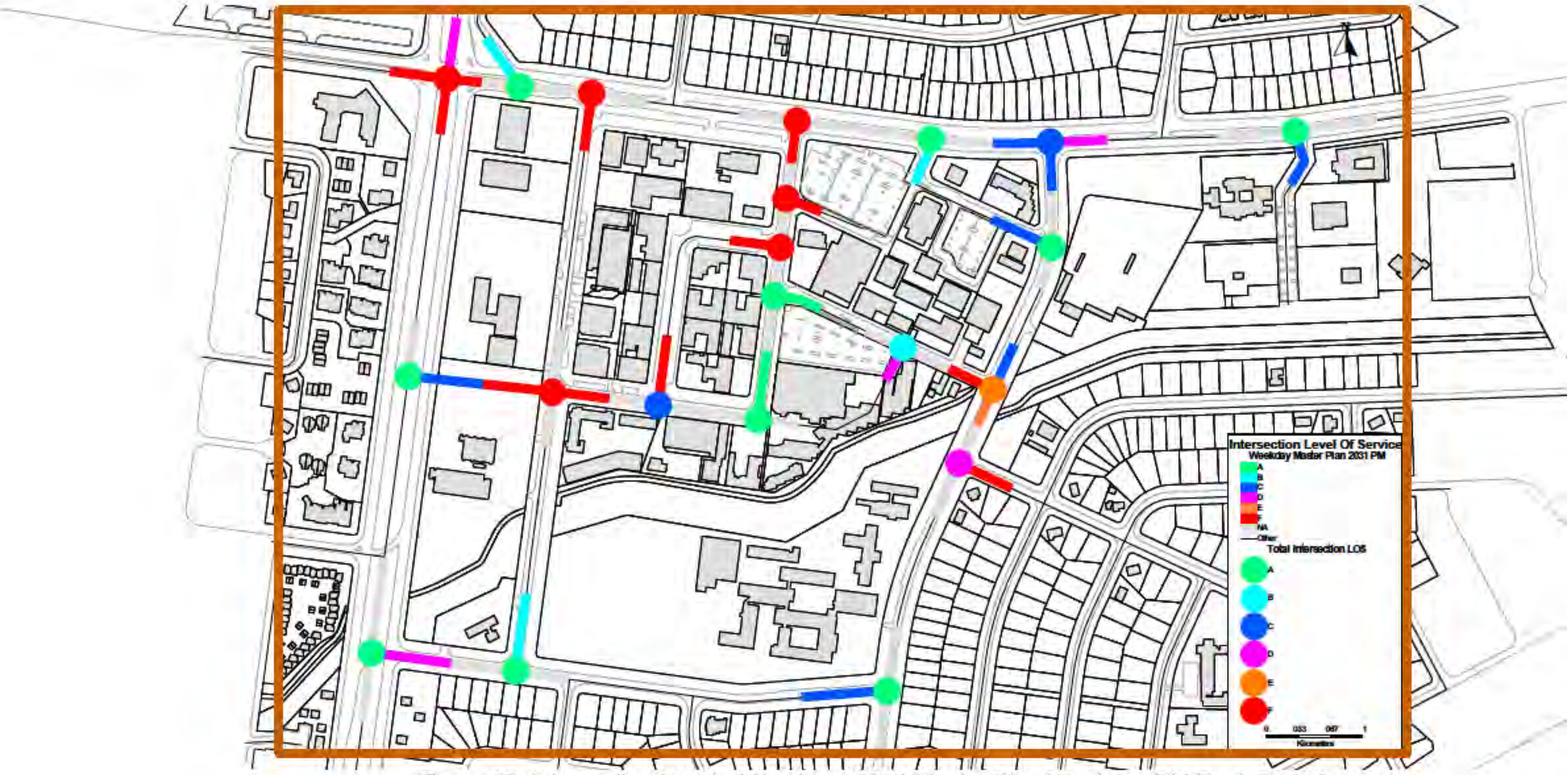

Figure 37: Intersection Level of Service – 2031 Master Plan Weekday PM Peak Period

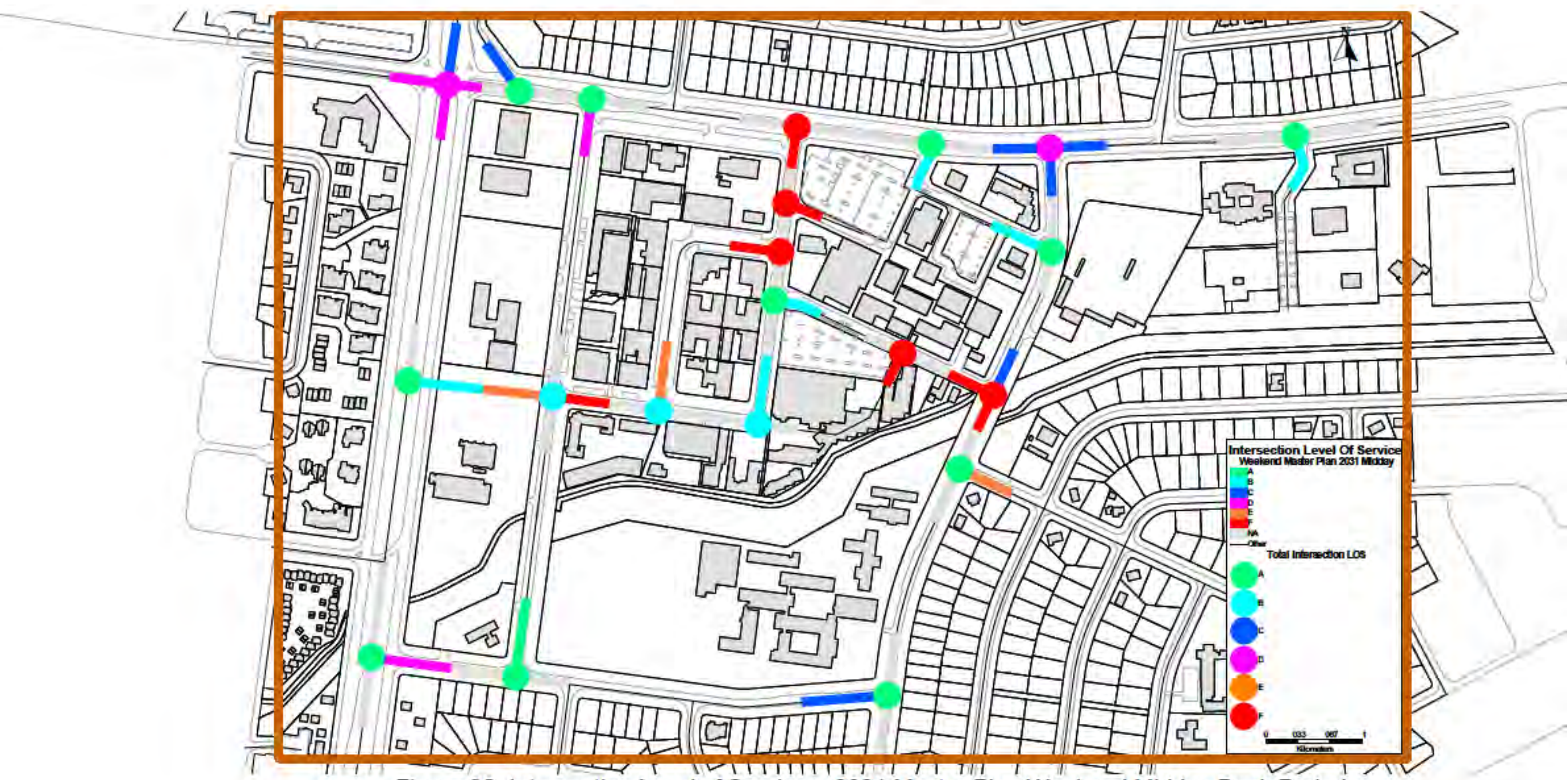

Figure 38: Intersection Level of Service – 2031 Master Plan Weekend Midday Peak Period

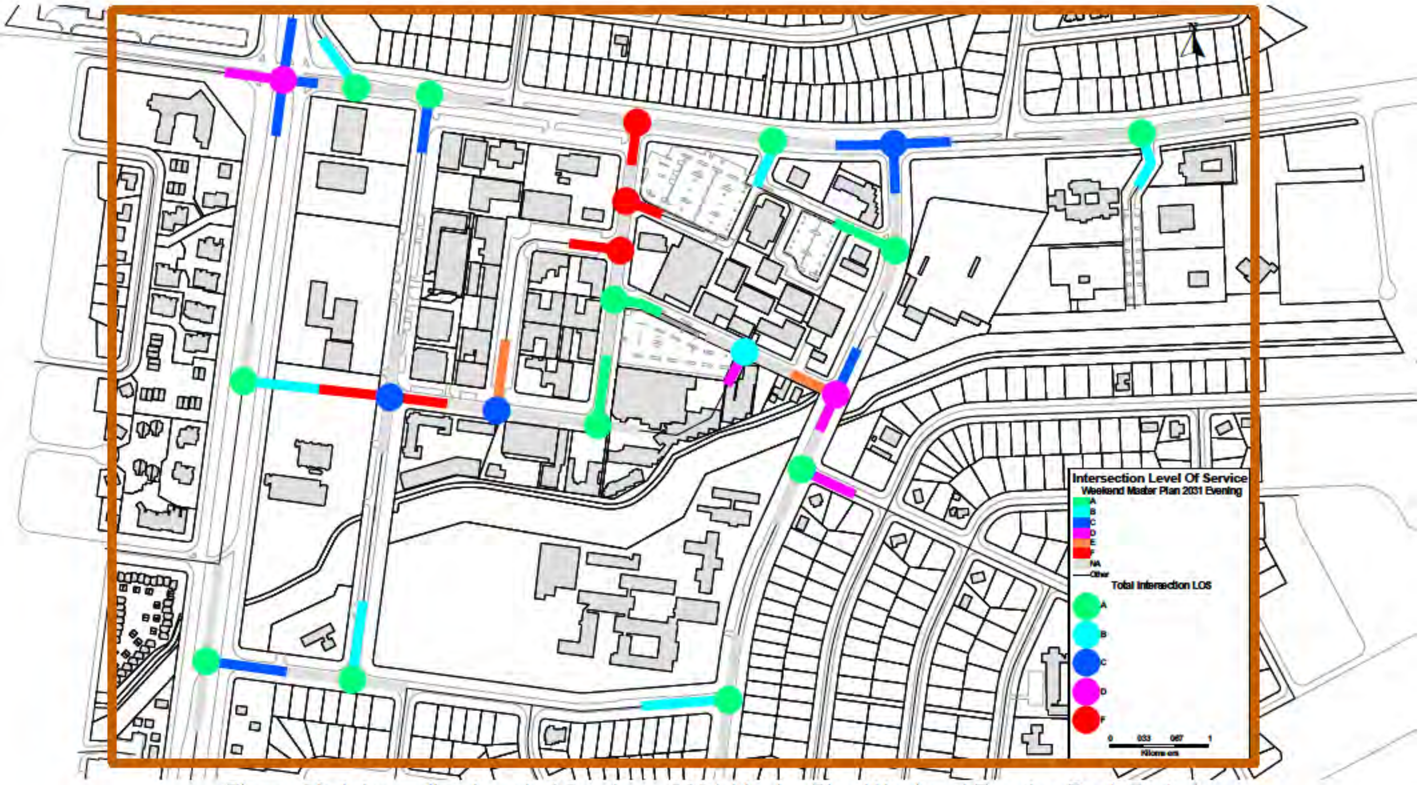

Figure 39: Intersection Level of Service – 2031 Master Plan Weekend Evening Peak Period

From the preceding figures, it can be seen that there are a number of intersections and links that are expected to operate at Level of Service F if the master plan developments are implemented. The intersections include:

- Northbourne Avenue – Antill Street / Mouat Street (AM and PM peaks)
- Antill Street – Northbourne Avenue Service Road (AM peak)
- Antill Street – Challis Street (AM and PM peaks)
- Challis Street – Cape Street (AM, PM and weekend evening peaks)
- Antill Street – Badham Street (AM, PM, weekend midday and weekend evening peaks)
- Badham Street – Dickson Shops Road (AM, weekend midday and weekend evening peaks)
- Badham Street – Woolley Street (PM, weekend midday and weekend evening peaks)
- Cowper Street – Dickson Place (AM and weekend midday peaks)
- Cowper Street – Davenport Street (AM peak)
- Cowper Street – Morphett Street (AM peak)

In addition to these intersections, the following roads are expected to operate at Level of Service F in 2031 if the master plan is implemented:

- Morphett Street, at its intersection with Northbourne Avenue (AM and weekend midday peaks)
- Challis Street, at its intersection with Morphett Street (AM peak)
- Woolley Street, at its intersection with Badham Street (weekend midday peak)
- Woolley Street, at its intersection with Cape Street (AM and PM peaks)
- Dickson Place, at its intersection with Cowper Street (PM peak)

- Dickson Shops Road, at its intersection with Cowper Street (AM peak)
- Davenport Street, at its intersection with Cowper Street (PM peak)

Recommendations to address these performance issues are presented in the following sections.

4.3 Summary of Issues Found and Potential Solutions

A number of recommendations have been made to allow the implementation of the master plan. These relate to:

- Pedestrian and cyclist facilities
- Car parking
- Road network and intersections

These recommendations are shown in *Figure* ***40*** and discussed in the following sections.

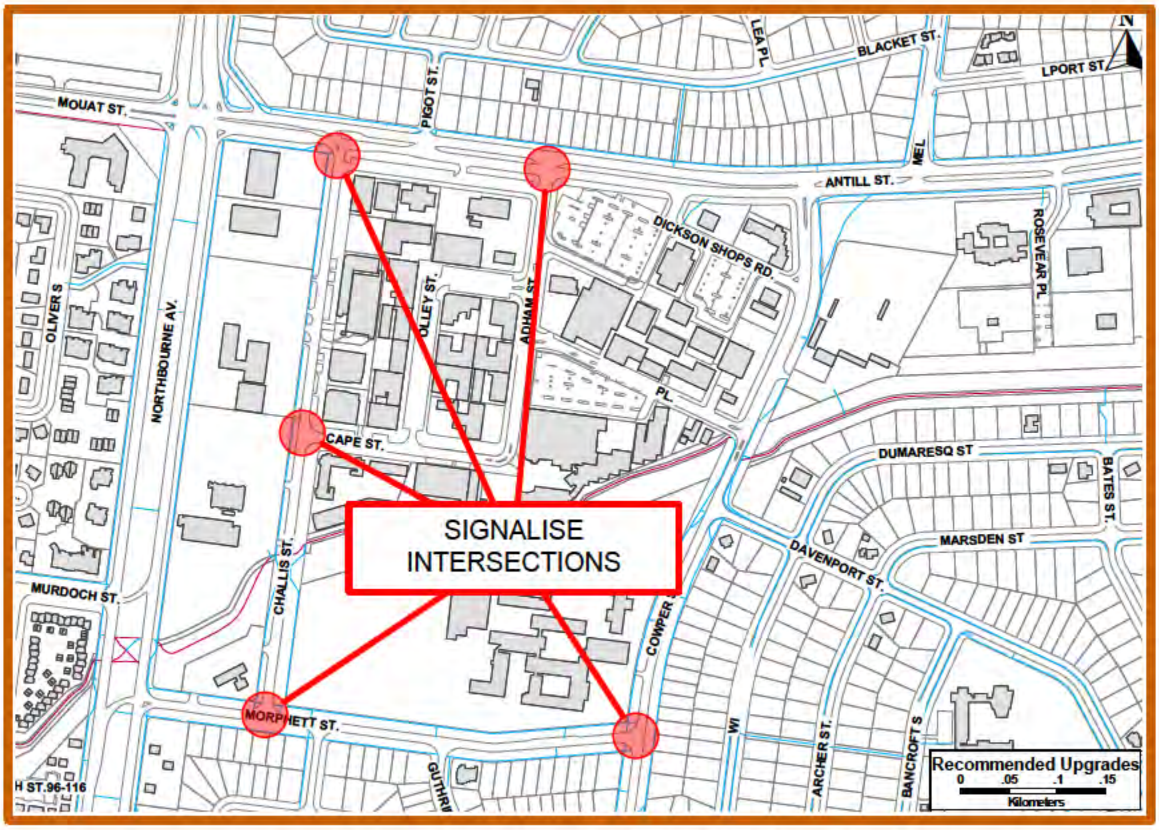

Figure 40: Recommended Upgrades for the 2031 Master Plan Scenario

Figure ***41*** through *Figure* ***45*** show the recommended layouts for the intersection upgrades shown in *Figure* ***40***. Signalisation of these intersections is recommended over any other intersection upgrade. The intersections will not operate at an acceptable level of service if they remain priority controlled. Converting them to roundabouts, while providing some level of traffic calming, would take additional space and would not cater well to pedestrians. The midblock capacities of the roads appear to be sufficient and no major widening is required. The only widening required is additional turning lanes at the intersections, as shown in the figures below.

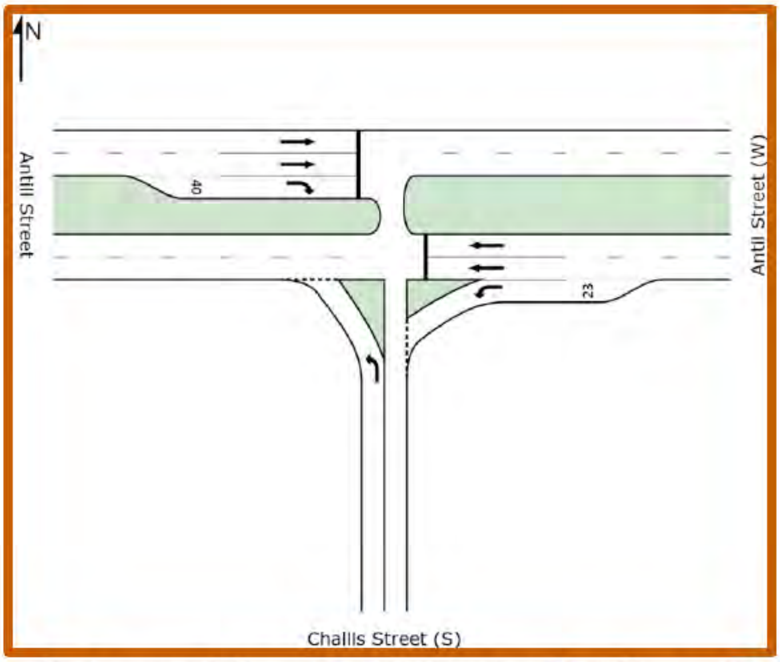

Figure 41: Recommended Layout for the Intersection of Antill Street and Challis Street

The recommended intersection Antill Street and Challis Street retains the existing footprint and number of lanes on each approach. The signalisation will allow better access and egress to and from Challis Street for cars and pedestrians without unduly delaying traffic on Antill Street.

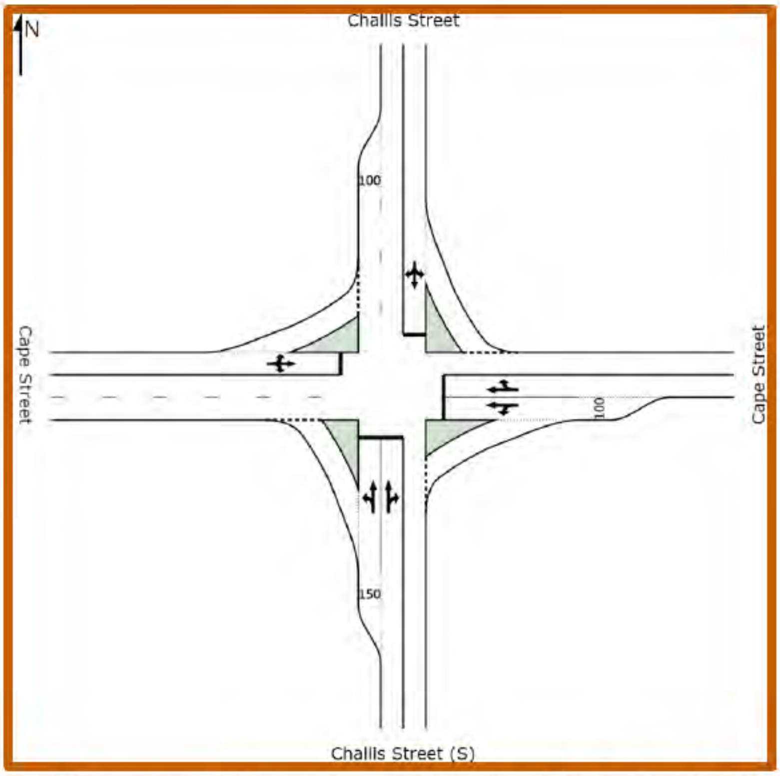

Figure 42: Recommended Layout for the Intersection of Challis Street and Cape Street

The intersection of Challis Street and Cape Street is proposed to be upgraded to a four-way intersection in the master plan. Four-way priority controlled intersections tend to perform poorly and this is no exception. Signalising this intersection improves the traffic performance and has the additional benefit of improving pedestrian accessibility. Converting this intersection to a roundabout is not recommended because of the pedestrian accessibility issues a roundabout would create.

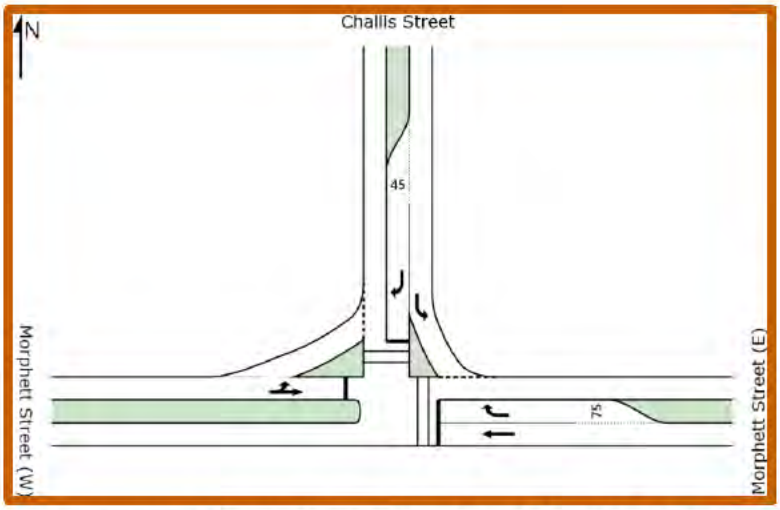

Figure 43: Recommended Layout for the Intersection of Morphett Street and Challis Street

The intersection of Morphett Street and Challis Street is also recommended to be signalised. This allows access and egress to and from Challis Street without overly delaying traffic on Morphett Street. As with the other intersections, pedestrian accessibility is important, especially this close to Daramalan College. The signals here will increase the safety for students walking and cycling to school.

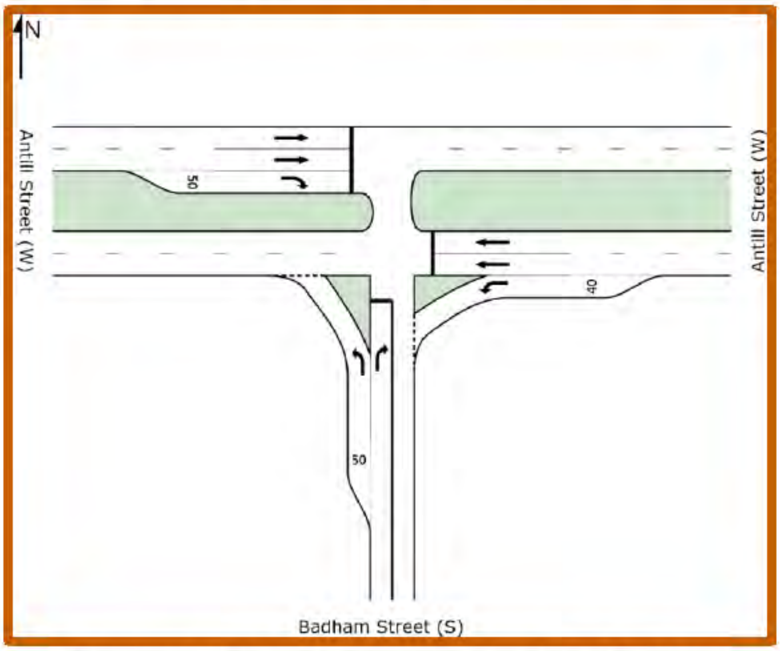

Figure 44: Recommended Layout for the Intersection of Antill Street and Badham Street

Signalising the intersection of Antill Street and Badham Street will allow better access to and from the central part of the Dickson Centre.

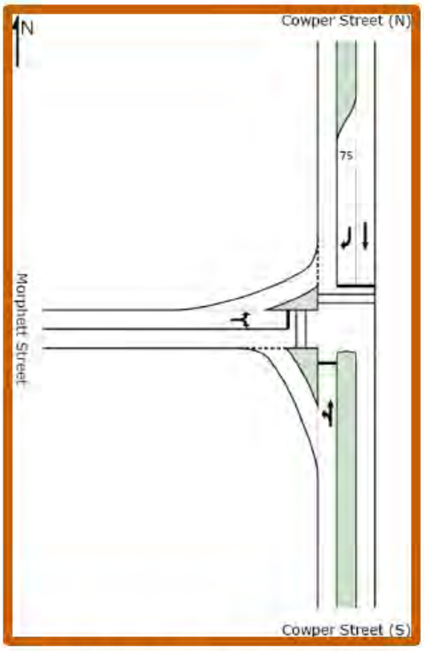

Figure 45: Recommended Layout for the Intersection of Morphett Street and Cowper Street

Signalising the intersection of Morphett Street and Cowper Street is expected to improve the traffic performance and also allow students to access Daramalan College much more safely than the current layout.

*Figure **46*** through *Figure **49*** show the intersection levels of service for the four peak periods in 2031, assuming that the master plan and the recommended intersection layouts presented above are implemented.

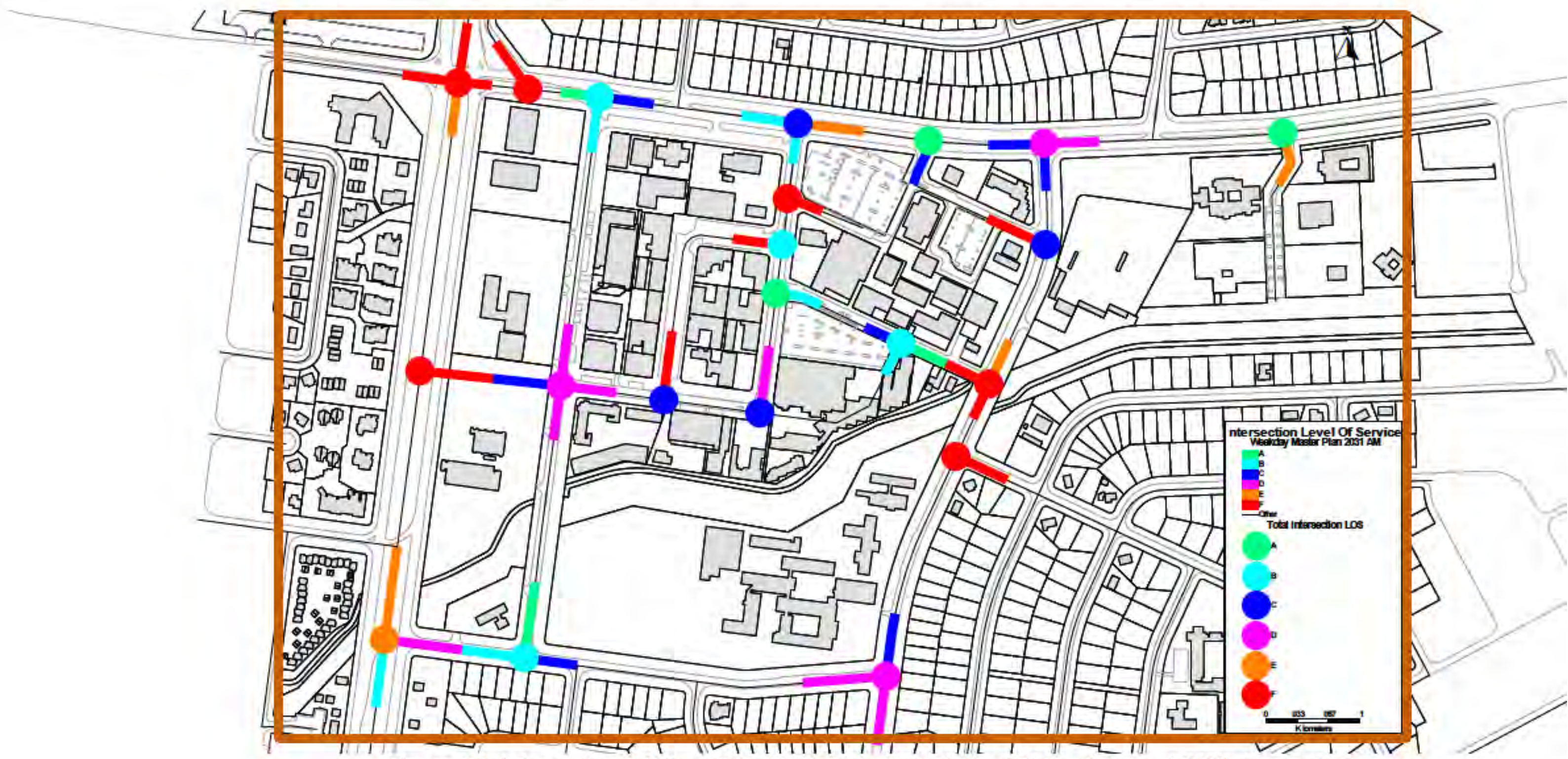

Figure 46: Intersection LOS – 2031 Master Plan Weekday AM Peak Period (With Upgrades)

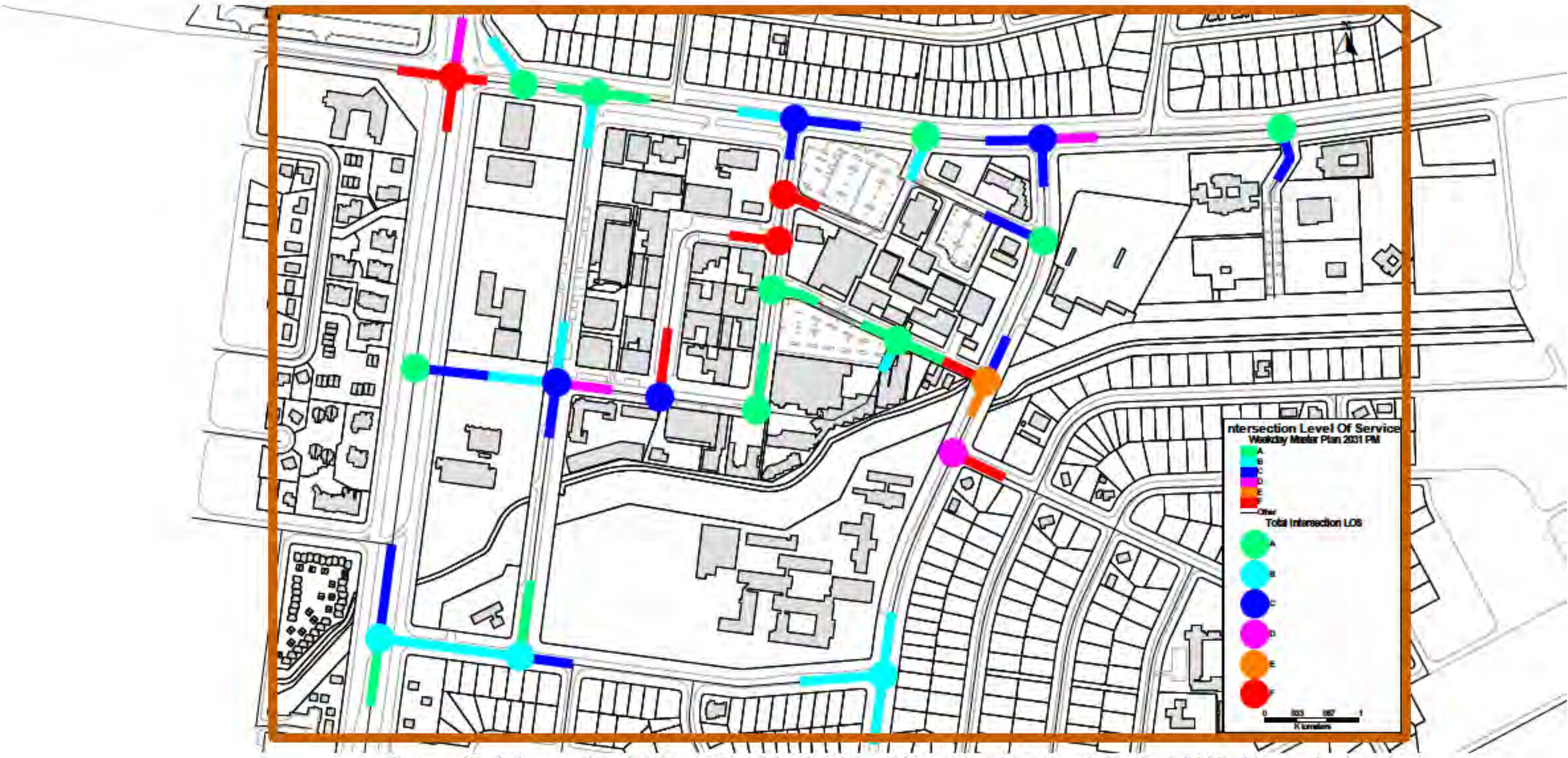

Figure 47: Intersection LOS – 2031 Master Plan Weekday PM Peak Period (With Upgrades)

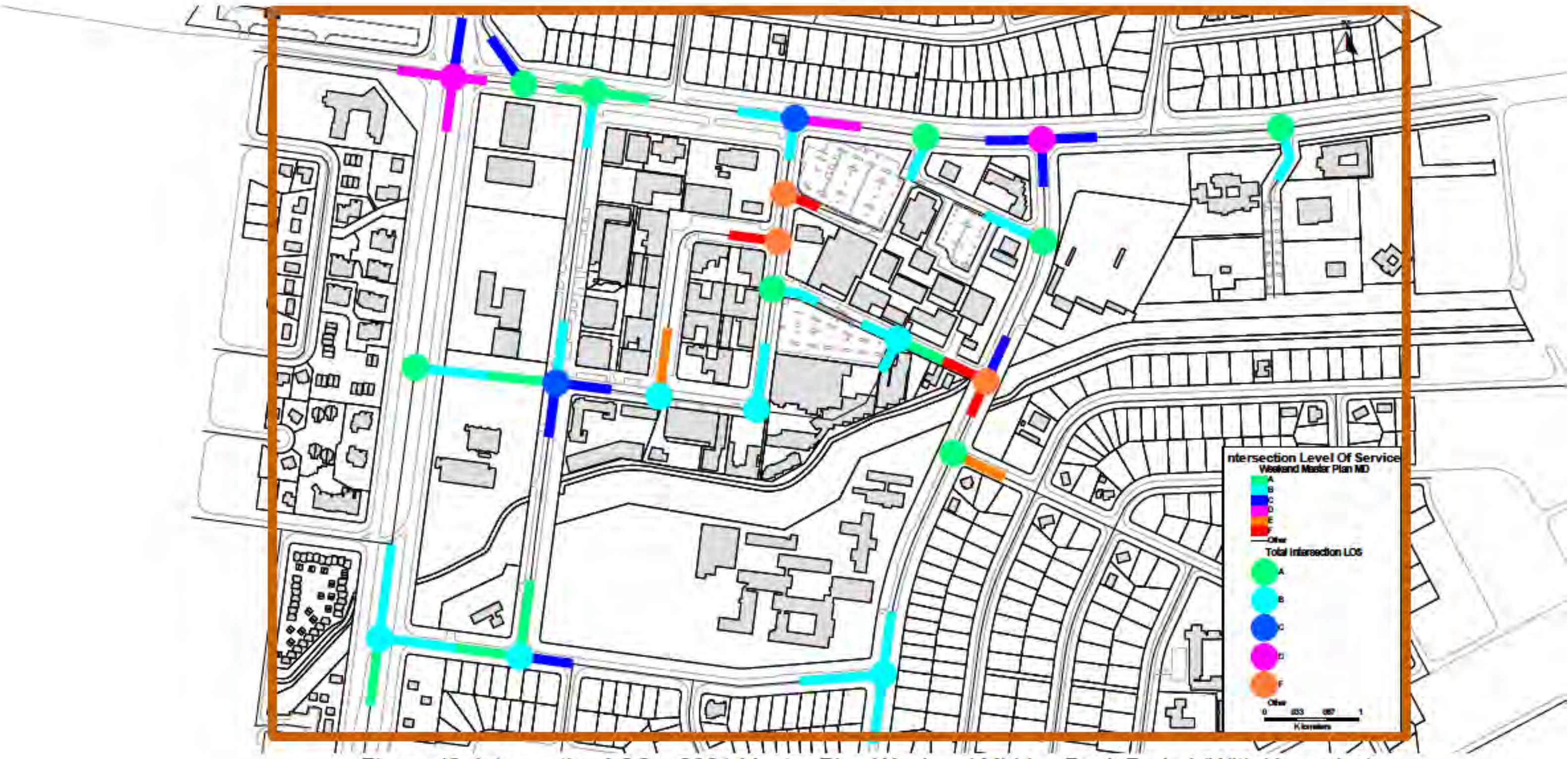

Figure 48: Intersection LOS – 2031 Master Plan Weekend Midday Peak Period (With Upgrades)

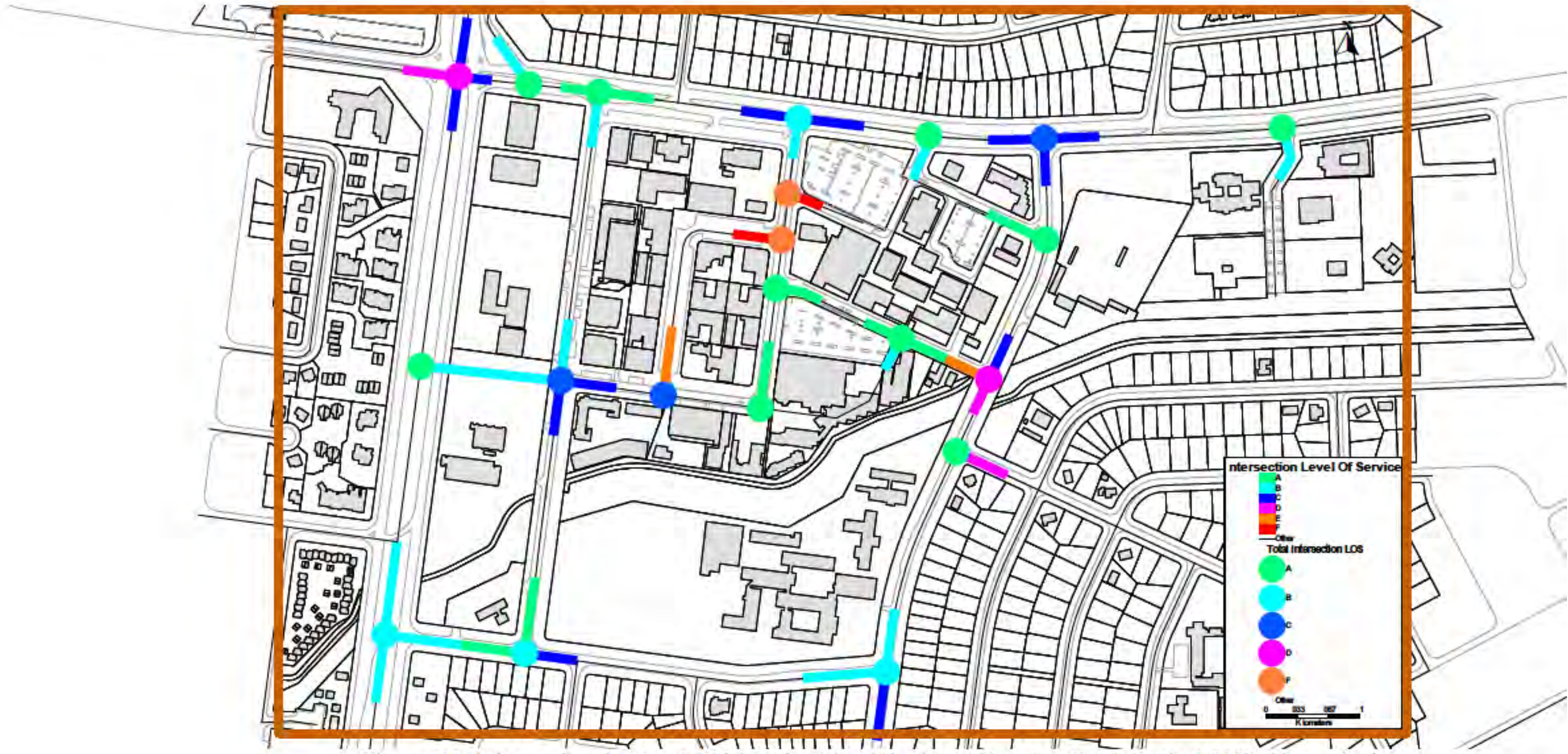

Figure 49: Intersection LOS – 2031 Master Plan Weekend Evening Peak Period (With Upgrades)

Table ***13*** summarises the differences in levels of service due to the recommended intersection upgrades.

Table 13: Comparison of Levels of Service (2031)

Intersection	LOS (Master Plan)				LOS (With Upgrades)			
	AM	PM	MD	EV	AM	PM	MD	EV
Antill Street – Challis Street	F	F	A	A	B	A	A	A
Antill Street – Badham Street	F	F	F	F	C	C	C	B
Challis Street – Cape Street	F	F	B	C	D	C	C	C
Northbourne Avenue – Morphett Street	B	A	A	A	E	B	B	B
Challis Street – Morphett Street	E	A	A	A	B	B	B	B
Morphett Street – Cowper Street	F	A	A	A	D	B	B	B
Dickson Place – Cape Street Extension	F	B	F	B	B	A	B	A

From *Table* ***13***, it can be seen that the recommended upgrades provide a benefit in nearly all cases. An apparent exception to this is the intersection of Northbourne Avenue and Morphett Street, which has a worse overall level of service. While the overall level of service has worsened, delays on Morphett Street itself have decreased from LOS F to LOS D in the weekday AM peak and from LOS D to LOS B in all other peaks. However, southbound traffic on Northbourne Avenue is slightly delayed, going from no delay in any peak to LOS E in the AM peak and LOS B in other peaks. There is no impact on northbound traffic at this intersection.

It is noted that there are some intersections that are expected to perform poorly, especially inside the Dickson precinct. No recommendations have been made for these intersections at this stage as the focus has been on the performance of the surrounding arterial and collector road network. Intersection performance inside the centre will need to be assessed in more detail as the master plan developments are implemented over the next 20 years and details such as car park entry/exit locations and capacities are known.

4.3.1 Pedestrian and Cyclist Facility Improvements

The following improvements to the pedestrian and cyclist facilities are recommended:

- Providing north/south external links into Dickson by signalising the intersection of Antill Street and Badham Street
- Improving pedestrian safety at the intersection of Morphett Street and Challis Street (preferably by signalisation)
- Improving pedestrian safety at the intersection of Morphett Street and Cowper Street (preferably by signalisation)

Provide new pedestrian connections inside Dickson Precinct as shown in the master plan (*Figure **28***). It is assumed that these internal links will be developed as the surrounding buildings are further developed.

4.3.2 Car Parking Options

It is recommended to develop the proposed supermarkets and associated retail facilities on Blocks 19 and 21 in stages. If possible, Block 21 should also be developed in stages. By leaving some of the parking area undisturbed it is possible to for the adjacent parking areas to provide the additional parking spaces needed during the construction phase.

The master plan does not include enough details regarding the proposed land use to accurately predict the number of parking spaces required in the future. However, a brief assessment indicates that the requirement for parking is likely to rise from approximately 2,500 in 2012 to approximately 6,000 in 2031. All proposed developments should meet the parking requirements set out in the *ACT Parking and Vehicular Access General Code* or whichever code is relevant at the time of development.

In the future, it may be possible to reduce the parking requirements by considering dual use or shared parking. Dual use parking, referred to in Brown Consulting (2011), is where a number of land uses share a parking area. Users are able to visit more than one land use without requiring a second car parking space. This sharing of parking spaces has already been taken into account in the requirements of the ACT general code.

4.3.3 Road Network and Intersection Options

The analysis of the road network and intersection performance has identified a number of locations where the level of service is expected to be poor or unacceptable. These locations are on arterial roads around the Dickson precinct and also on local streets inside the precinct. At this stage in the process, it is considered appropriate to make recommendations to improve the level of service on the arterials roads while the local streets can tolerate a higher delay. In addition, the operation of some of the local streets is highly dependent on the location of access to future parking areas, which is not yet known.

It is recommended that the following changes to intersections are made to address identified performance issues:

- Signalisation of the following intersections:

- Antill Street and Challis Street
- Challis Street and Cape Street
- Challis Street and Morphett Street
- Antill Street and Badham Street (also recommended to improve pedestrian access to Dickson from the suburbs to the north)
- Morphett Street and Cowper Street (also recommended to improve pedestrian safety around Daramalan College)

5 COST ESTIMATES

The analysis of the current situation and the long term master plan has revealed a number of transport related issues that need to be addressed to enable the proposed developments to proceed. The indicative cost estimates have been calculated for each of the changes recommended in Sections 3.4 and 4.3 and these estimates are presented in the following sections.

5.1 Cost of Recommendation for Current Issues

The costs of the recommendations to address current identified issues have been estimated and are presented in *Table **14***.

Table 14: Estimated Cost of Recommended Upgrades – Current

Recommendation	Estimated Cost
Pedestrian crossing on Challis Street near Morphett Street	$3,800
Pedestrian crossing on Challis Street near the Telstra Building	$3,800
Pedestrian crossing on Antill Street near Pigot Street	$3,800
Pedestrian crossing on Dickson Shops Road close to Cowper Street	$3,800
Widen the concrete paths around Daramalan College to 2.0m	$155,000
Provide better lighting on the path extension from Badham Street to the shared path to the south	$6,600
Ensure pedestrian ramps along Challis Street have appropriate steepness for wheelchair access	$67,000
Construct a new pedestrian/cyclist path connection from Rosevear Place to the shared path to the south	$70,000
Signalise the intersection of Morphett Street with the southbound carriageway of Northbourne Avenue	$120,100
Subtotal	**$433,900**
Contingency (40%)	$173,560
GST (10%)	$43,390
Total	**$650,850**

5.2 Cost of Long Term Recommendations

The costs of the recommendations to address issues in the long term have been estimated and are presented in *Table **15***.

Table 15: Estimated Cost of Recommended Upgrades – Long Term

Recommendation	Estimated Cost
Signalise the intersection of Antill Street and Challis Street	$140,300
Signalise the intersection of Challis Street and Cape Street	$186,100
Signalise the intersection of Challis Street and Morphett Street	$129,500
Signalise the intersection of Antill Street and Badham Street (also recommended to improve pedestrian access to Dickson)	$148,500
Signalise the intersection of Morphett Street and Cowper Street (also recommended to improve pedestrian safety around Daramalan College)	$138,000
Subtotal	**$742,400**
Contingency (40%)	$296,960
GST (10%)	$74,240
Total	**$1,113,600**

6 CONCLUSIONS

The current and future transport operations in Dickson have been assessed and it was found that a small number of upgrades to existing facilities are required, both now and in the future to allow the full development of the master plan.

6.1 Immediate/Short Term Recommendations

The current operation of the transport network in Dickson was assessed and found to be generally good. However, addressing the following improvements should be prioritised in the short term:

- Pedestrian and cyclist infrastructure and safety:
  - Provide a pedestrian crossing on Challis Street near its intersection with Morphett Street
  - Provide a pedestrian crossing on Challis Street near the Telstra Building
  - Provide a pedestrian crossing on Antill Street near its intersection with Pigot Street (short term only)
  - Provide a pedestrian crossing on Dickson Shops Road close to the intersection with Cowper Street
  - Monitor the safety of the pedestrian crossing on Challis Street north of Daramalan College and construct a raised pedestrian crossing if required
  - Widen the 1.2m concrete paths around Daramalan College to 2.0m wide
  - Provide better lighting on the path extension from Badham Street to the shared path to the south of the precinct to improve security
  - Ensure pedestrian ramps along Challis Street have appropriate steepness for wheelchair access.
  - Construct a new pedestrian/cyclist path connection from north of Rosevear Place to shared path to the south and swimming pool
- Car parking operations:
  - Implement better signage to inform users about the location of parking areas that are currently underutilised
- Road network and intersections
  - Signalise the intersection of Morphett Street with the southbound carriageway of Northbourne Avenue. The northbound carriageway would remain as it is.

These recommendations are expected to improve the transport operations and safety in Dickson in the short term.

Also in the short term, the proposed capacity of the car parks provided as part of the development of Blocks 19 and 21 needs to be consistent with the ACT general code. Initial estimates by Brown Consulting place the additional car parking requirements at 326 spaces, in addition to the existing 359 spaces that will need to be replaced by any new development.

It is recommended that the development of Blocks 19 and 21 be staged to reduce the impact on parking supply in Dickson. Block 19 may be able to be developed without provision of significant temporary car parking but the development of Block 21 is expected to require temporary parking to be provided during construction.

6.2 Long Term Recommendations

In the long term, the transport demands in Dickson are expected to increase significantly, both with and without the implementation of the master plan. A number of recommendations have been made to allow implementation of the master plan and these should be implemented as required. These recommendations include:

- Pedestrian and cyclist infrastructure and safety:
  - Provide north/south external links into Dickson by signalising the intersection of Antill Street and Badham Street
  - Improve pedestrian safety at the intersection of Morphett Street and Challis Street (preferably by signalisation)
  - Improve pedestrian safety at the intersection of Morphett Street and Cowper Street (preferably by signalisation)
- Car parking operations:
  - Implement an area wide parking strategy to efficiently plan parking for future developments
- Road network and intersections:
  - Signalise the intersection of Antill Street and Challis Street
  - Signalise the intersection of Challis Street and Cape Street
  - Signalise the intersection of Challis Street and Morphett Street
  - Signalise the intersection of Antill Street and Badham Street (also recommended to improve pedestrian access to Dickson from the suburbs to the north)
  - Signalise the intersection of Morphett Street and Cowper Street (also recommended to improve pedestrian safety around Daramalan College)

APPENDIX A 2012 (EXISTING) SIDRA RESULTS

MOVEMENT SUMMARY

Site: 1 AM

1- Northbourne Avenue - Antill Street - Mouat Street
2012 AM
Signals - Fixed Time Cycle Time = 125 seconds (User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	127	9.9	0.136	11.4	LOS B	1.8	13.6	0.30	0.67	46.0
2	T	534	12.1	0.340	28.7	LOS C	9.6	74.3	0.74	0.62	32.2
3	R	153	6.4	1.135	211.1	LOS F	18.6	137.1	1.00	1.41	9.0
Approach		815	10.6	1.135	60.3	LOS E	18.6	137.1	0.72	0.78	22.3
East: Antill Street											
4	L	339	4.3	0.800	41.8	LOS D	17.0	123.5	0.84	0.88	28.2
5	T	499	4.0	1.524	368.4	LOS F	64.2	464.9	1.00	1.82	5.3
6	R	156	3.4	0.809	72.6	LOS E	10.2	73.3	1.00	0.92	20.4
Approach		994	4.0	1.524	210.6	LOS F	64.2	464.9	0.95	1.36	8.8
North: Northbourne Avenue (N)											
7	L	123	3.4	0.129	14.0	LOS B	2.4	17.6	0.38	0.68	43.5
8	T	1725	5.0	0.837	42.4	LOS D	34.2	249.5	0.98	0.94	26.5
9	R	143	3.5	1.042	137.5	LOS F	13.6	97.9	1.00	1.23	12.7
Approach		1992	4.8	1.042	47.5	LOS D	34.2	249.5	0.94	0.94	25.1
West: Mouat Street (W)											
10	L	103	6.1	1.300	326.8	LOS F	75.5	539.4	1.00	1.81	6.1
11	T	629	1.5	1.300	326.7	LOS F	82.4	588.1	1.00	1.91	5.9
12	R	661	2.9	1.300	192.3	LOS F	82.4	588.1	1.00	1.45	9.8
Approach		1394	2.5	1.300	263.0	LOS F	82.4	588.1	1.00	1.69	7.3
All Vehicles		5194	4.9	1.524	138.5	LOS F	82.4	588.1	0.92	1.20	12.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: 2 AM

Northbourne Avenue Service Road - Antill Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	443	0.2	0.895	34.0	LOS D	12.6	88.6	0.93	1.73	30.9
Approach		443	0.2	0.895	34.0	LOS D	12.6	88.6	0.93	1.73	30.9
West: Antill Street (W)											
10	L	1	0.0	0.248	9.1	LOS A	0.0	0.0	0.00	1.19	48.1
11	T	900	2.8	0.248	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		901	2.8	0.248	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		1344	2.0	0.895	11.2	NA	12.6	88.6	0.31	0.57	45.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 3 AM

Antill Street - Challis Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	96	4.4	0.232	15.9	LOS C	0.9	6.3	0.71	0.90	42.0
Approach		96	4.4	0.232	15.9	LOS C	0.9	6.3	0.71	0.90	42.0
East: Antil Street (W)											
4	L	194	2.2	0.275	10.5	LOS B	1.0	7.1	0.46	0.73	46.7
5	T	900	3.6	0.249	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1094	3.4	0.275	1.9	NA	1.0	7.1	0.08	0.13	57.1
West: Antill Street											
11	T	919	3.8	0.254	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	425	0.7	0.759	21.2	LOS C	5.7	40.3	0.87	1.25	37.9
Approach		1344	2.8	0.759	6.7	NA	5.7	40.3	0.27	0.40	50.6
All Vehicles		2534	3.1	0.759	5.0	NA	5.7	40.3	0.21	0.30	52.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 4 AM

Antill Street - Badham Street
2012 AM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	114	2.8	0.369	21.8	LOS C	1.6	11.2	0.76	1.07	38.6
3	R	23	0.0	0.369	21.2	LOS C	1.6	11.2	0.76	1.06	38.8
Approach		137	2.3	0.369	21.7	LOS C	1.6	11.2	0.76	1.06	38.7
East: Antill Street (W)											
4	L	175	3.0	0.178	9.7	LOS A	0.7	5.0	0.40	0.68	47.6
5	T	896	3.9	0.248	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1071	3.7	0.248	1.6	NA	0.7	5.0	0.07	0.11	57.5
West: Antill Street (W)											
11	T	609	1.9	0.334	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	392	3.0	0.667	18.8	LOS C	4.5	32.2	0.81	1.15	39.6
Approach		1001	2.3	0.667	7.3	NA	4.5	32.2	0.32	0.45	50.0
South West: Median (RT Stage 2)											
32	R	23	0.0	0.033	11.0	LOS B	0.1	0.7	0.52	0.74	30.5
Approach		23	0.0	0.033	11.0	LOS B	0.1	0.7	0.52	0.74	30.5
All Vehicles		2232	3.0	0.667	5.5	NA	4.5	32.2	0.23	0.33	52.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 5 AM

Antill Street - Dickson Shops Access Road
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	74	4.3	0.189	16.1	LOS C	0.7	4.9	0.72	0.89	41.9
Approach		74	4.3	0.189	16.1	LOS C	0.7	4.9	0.72	0.89	41.9
East: Antill Street (W)											
4	L	72	4.4	0.300	8.3	LOS A	0.0	0.0	0.00	1.01	49.0
5	T	1006	4.0	0.300	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1078	4.0	0.300	0.6	NA	0.0	0.0	0.00	0.07	59.1
All Vehicles		1152	4.0	0.300	1.6	NA	0.7	4.9	0.05	0.12	57.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 6 AM

Antill Street - Cowper Street
2012 AM
Signals - Fixed Time Cycle Time = 45 seconds (User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	158	11.3	0.242	18.6	LOS B	2.4	18.3	0.70	0.77	40.0
3	R	233	5.0	1.025	80.0	LOS F	11.0	79.9	1.00	1.51	18.8
Approach		391	7.5	1.025	55.2	LOS E	11.0	79.9	0.88	1.21	23.9
East: Antill Street (E)											
4	L	259	0.6	1.108	142.6	LOS F	18.3	128.9	1.00	1.86	12.2
5	T	1167	2.7	0.970	45.7	LOS D	23.0	165.0	1.00	1.44	25.2
Approach		1426	2.0	1.108	63.3	LOS E	23.0	165.0	1.00	1.51	21.1
West: Antill Street (W)											
11	T	367	2.4	0.303	12.4	LOS B	3.1	22.2	0.78	0.64	42.2
12	R	256	1.2	1.098	134.1	LOS F	17.3	122.3	1.00	1.82	12.8
Approach		623	1.9	1.098	62.4	LOS E	17.3	122.3	0.87	1.12	21.7
All Vehicles		2440	2.8	1.108	61.8	LOS E	23.0	165.0	0.95	1.37	21.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 7 AM

Antill Street - Rosevear Place
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	73	1.4	0.357	27.3	LOS D	1.3	9.2	0.87	1.01	34.3
3	R	7	0.0	0.357	26.8	LOS D	1.3	9.2	0.87	1.00	34.4
Approach		80	1.3	0.357	27.2	LOS D	1.3	9.2	0.87	1.01	34.3
East: Antill Street (E)											
4	L	38	0.0	0.320	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
5	T	1131	1.8	0.320	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1168	1.7	0.320	0.3	NA	0.0	0.0	0.00	0.03	59.6
West: Antill Street											
11	T	453	3.5	0.226	1.2	LOS A	1.1	8.1	0.09	0.00	57.3
12	R	68	0.0	0.226	20.2	LOS C	1.1	8.1	0.88	1.00	39.5
Approach		521	3.0	0.226	3.7	NA	1.1	8.1	0.19	0.13	54.1
South West: Median (RT Stage 2)											
32	R	7	0.0	0.015	12.3	LOS B	0.1	0.3	0.52	0.70	28.9
Approach		7	0.0	0.015	12.3	LOS B	0.1	0.3	0.52	0.70	28.9
All Vehicles		1777	2.1	0.357	2.5	NA	1.3	9.2	0.10	0.11	56.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Badham Street - Dickson Shop Access Road
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	119	0.9	0.136	3.1	LOS A	0.9	6.2	0.54	0.00	49.7
3	R	57	0.0	0.136	11.6	LOS B	0.9	6.2	0.54	0.93	47.1
Approach		176	0.6	0.136	5.9	NA	0.9	6.2	0.54	0.30	48.8
East: Dickson Shop Access Road (E)											
4	L	109	1.9	0.296	14.3	LOS B	1.3	9.0	0.60	0.89	43.0
6	R	44	2.4	0.296	14.6	LOS B	1.3	9.0	0.60	0.92	42.9
Approach		154	2.1	0.296	14.4	LOS B	1.3	9.0	0.60	0.90	43.0
North: Badham Street (N)											
7	L	138	0.0	0.289	8.2	LOS A	0.0	0.0	0.00	0.93	49.0
8	T	380	4.2	0.289	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		518	3.0	0.289	2.2	NA	0.0	0.0	0.00	0.25	56.6
All Vehicles		847	2.4	0.296	5.2	NA	1.3	9.0	0.22	0.38	51.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:15:28 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_AM.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 9 AM

Cowper Street - Dickson Shop Access Road
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	83	2.5	0.228	8.3	LOS A	0.0	0.0	0.00	0.96	49.0
2	T	314	9.4	0.228	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		397	8.0	0.228	1.7	NA	0.0	0.0	0.00	0.20	57.3
North: Cowper Street (N)											
8	T	672	0.6	0.452	4.0	LOS A	6.1	43.1	0.60	0.00	49.6
9	R	85	1.2	0.452	12.5	LOS B	6.1	43.1	0.60	1.01	47.0
Approach		757	0.7	0.452	5.0	NA	6.1	43.1	0.60	0.11	49.3
West: Dickson Shop Access Road (W)											
10	L	78	1.4	0.387	21.5	LOS C	1.8	13.0	0.66	0.87	37.7
12	R	49	0.0	0.387	22.0	LOS C	1.8	13.0	0.66	0.97	37.5
Approach		127	0.8	0.387	21.7	LOS C	1.8	13.0	0.66	0.91	37.6
All Vehicles		1281	3.0	0.452	5.7	NA	6.1	43.1	0.42	0.22	49.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:15:18 AM
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MOVEMENT SUMMARY

Badham Street - Woolley Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	19	5.6	0.078	8.4	LOS A	0.0	0.0	0.00	1.01	49.0
2	T	122	0.9	0.078	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		141	1.5	0.078	1.1	NA	0.0	0.0	0.00	0.14	58.2
North: Badham Street (N)											
8	T	454	3.5	0.286	0.8	LOS A	2.0	14.6	0.34	0.00	53.7
9	R	44	4.8	0.286	9.4	LOS A	2.0	14.6	0.34	0.95	49.0
Approach		498	3.6	0.286	1.5	NA	2.0	14.6	0.34	0.08	53.2
West: Woolley Street											
10	L	26	0.0	0.065	11.8	LOS B	0.2	1.6	0.33	0.61	45.3
12	R	13	0.0	0.065	12.0	LOS B	0.2	1.6	0.33	0.81	45.1
Approach		39	0.0	0.065	11.8	LOS B	0.2	1.6	0.33	0.68	45.2
All Vehicles		678	3.0	0.286	2.0	NA	2.0	14.6	0.27	0.13	53.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:15:03 AM
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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 11 AM

Badham Street - Dickson Place
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	93	1.1	0.150	3.6	LOS A	0.9	6.6	0.55	0.00	49.2
3	R	75	7.0	0.150	12.3	LOS B	0.9	6.6	0.55	0.93	46.3
Approach		167	3.8	0.150	7.5	NA	0.9	6.6	0.55	0.41	47.9
East: Dickson Place											
4	L	57	1.9	0.203	13.6	LOS B	0.8	5.4	0.57	0.79	43.6
6	R	46	0.0	0.203	13.8	LOS B	0.8	5.4	0.57	0.88	43.5
Approach		103	1.0	0.203	13.7	LOS B	0.8	5.4	0.57	0.83	43.6
North: Badham Street (N)											
7	L	299	4.2	0.307	8.3	LOS A	0.0	0.0	0.00	0.80	49.0
8	T	242	1.7	0.307	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		541	3.1	0.307	4.6	NA	0.0	0.0	0.00	0.44	53.4
All Vehicles		812	3.0	0.307	6.3	NA	0.9	6.6	0.19	0.49	50.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:14:53 AM
SIDRA INTERSECTION 5.1.12.2089

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 12 AM

Cowper Street - Dickson Place
2012 AM
Signals - Fixed Time Cycle Time = 54 seconds (User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	119	0.0	0.550	19.0	LOS B	8.9	64.9	0.75	0.89	41.1
2	T	349	6.9	0.550	10.8	LOS B	8.9	64.9	0.75	0.66	42.9
Approach		468	5.2	0.550	12.9	LOS B	8.9	64.9	0.75	0.72	42.5
North: Cowper Street (N)											
8	T	685	0.9	0.774	15.3	LOS B	16.8	118.4	0.89	0.86	39.8
9	R	26	0.0	0.110	23.7	LOS C	0.5	3.6	0.75	0.72	36.3
Approach		712	0.9	0.774	15.6	LOS B	16.8	118.4	0.88	0.86	39.6
West: Dickson Place (W)											
10	L	67	15.6	0.858	40.1	LOS D	8.6	62.7	1.00	1.02	28.7
12	R	202	2.1	0.858	39.7	LOS D	8.6	62.7	1.00	1.02	28.7
Approach		269	5.5	0.858	39.8	LOS D	8.6	62.7	1.00	1.02	28.7
All Vehicles		1449	3.1	0.858	19.2	LOS B	16.8	118.4	0.86	0.84	37.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:14:29 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_AM.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 13 AM

Challis Street - Cape Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
2	T	228	0.9	0.285	3.6	LOS A	2.2	15.7	0.61	0.00	48.5
3	R	135	2.3	0.285	12.1	LOS B	2.2	15.7	0.61	0.97	46.7
Approach		363	1.4	0.285	6.8	NA	2.2	15.7	0.61	0.36	47.8
East: Cape Street											
4	L	201	2.6	0.539	18.9	LOS C	3.2	23.3	0.69	1.06	39.5
6	R	52	4.1	0.539	19.2	LOS C	3.2	23.3	0.69	1.04	39.5
Approach		253	2.9	0.539	18.9	LOS C	3.2	23.3	0.69	1.06	39.5
North: Challis Street											
7	L	48	4.3	0.265	8.3	LOS A	0.0	0.0	0.00	1.03	49.0
8	T	436	1.0	0.265	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		484	1.3	0.265	0.8	NA	0.0	0.0	0.00	0.10	58.7
All Vehicles		1100	1.7	0.539	6.9	NA	3.2	23.3	0.36	0.41	49.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 14 AM

Cape Street - Woolley Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	216	1.5	0.128	0.9	LOS A	0.8	6.0	0.34	0.00	53.7
6	R	12	9.1	0.128	9.7	LOS A	0.8	6.0	0.34	0.99	49.1
Approach		227	1.9	0.128	1.3	NA	0.8	6.0	0.34	0.05	53.5
North: Woolley Street											
7	L	11	10.0	0.069	12.3	LOS B	0.3	1.9	0.44	0.62	45.0
9	R	27	7.7	0.069	12.6	LOS B	0.3	1.9	0.44	0.78	44.8
Approach		38	8.3	0.069	12.5	LOS B	0.3	1.9	0.44	0.73	44.9
West: Cape Street (W)											
10	L	28	0.0	0.098	8.2	LOS A	0.0	0.0	0.00	0.98	49.0
11	T	148	2.8	0.098	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		177	2.4	0.098	1.3	NA	0.0	0.0	0.00	0.16	57.9
All Vehicles		442	2.6	0.128	2.3	NA	0.8	6.0	0.21	0.15	54.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:13:53 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 15 AM

Cowper Street - Davenport Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	395	5.6	0.335	15.8	LOS C	7.1	52.7	1.00	0.00	38.8
3	R	42	22.5	0.335	25.2	LOS D	7.1	52.7	1.00	1.10	38.6
Approach		437	7.2	0.335	16.7	NA	7.1	52.7	1.00	0.11	38.8
East: Davenport Street (E)											
4	L	46	0.0	0.841	77.4	LOS F	5.4	37.7	0.96	1.42	19.1
6	R	77	0.0	0.841	77.6	LOS F	5.4	37.7	0.96	1.34	19.1
Approach		123	0.0	0.841	77.5	LOS F	5.4	37.7	0.96	1.37	19.1
North: Cowper Street											
7	L	133	1.6	0.488	8.2	LOS A	0.0	0.0	0.00	0.99	49.0
8	T	757	1.0	0.488	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		889	1.1	0.488	1.2	NA	0.0	0.0	0.00	0.15	58.1
All Vehicles		1449	2.8	0.841	12.4	NA	7.1	52.7	0.38	0.24	43.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:13:46 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 16 AM

Northbourne Avenue - Morphett Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	1031	9.3	0.197	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	102	1.7	1.700	745.7	LOS F	31.5	223.5	1.00	2.53	2.9
Approach		1133	6.8	1.700	67.2	NA	31.5	223.5	0.09	0.23	21.1
East: Morphett Street (E)											
4	L	262	2.0	4.368	3110.8	LOS F	137.4	978.3	1.00	3.87	0.7
Approach		262	2.0	4.368	3110.8	LOS F	137.4	978.3	1.00	3.87	0.7
North: Northbourne Avenue (N)											
7	L	115	9.2	0.484	8.5	LOS A	0.0	0.0	0.00	1.02	49.0
8	T	2492	4.2	0.484	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		2606	4.4	0.484	0.4	NA	0.0	0.0	0.00	0.04	59.4
All Vehicles		4001	4.9	4.368	223.0	NA	137.4	978.3	0.09	0.35	8.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:06:19 AM
SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 17 AM

Morphett Street - Challis Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	94	1.1	0.259	3.3	LOS A	1.5	10.6	0.56	0.00	48.5
6	R	173	1.8	0.259	11.7	LOS B	1.5	10.6	0.56	0.89	46.2
Approach		266	1.6	0.259	8.8	NA	1.5	10.6	0.56	0.58	47.0
North: Challis Street											
7	L	406	1.0	0.507	12.4	LOS B	3.4	24.4	0.58	0.92	44.7
9	R	177	2.4	0.554	25.1	LOS D	3.2	22.7	0.80	1.09	35.4
Approach		583	1.4	0.554	16.3	LOS C	3.4	24.4	0.65	0.97	41.4
West: Morphett Street (W)											
10	L	280	1.1	0.281	8.2	LOS A	0.0	0.0	0.00	0.80	49.0
11	T	214	6.4	0.281	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		494	3.4	0.281	4.7	NA	0.0	0.0	0.00	0.45	53.2
All Vehicles		1343	2.2	0.554	10.5	NA	3.4	24.4	0.39	0.70	46.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:06:29 AM
SIDRA INTERSECTION 5.1.12.2089

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_AM.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 18 AM

Cowper Street - Morphett Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	165	1.9	0.289	8.3	LOS A	0.0	0.0	0.00	0.90	49.0
2	T	344	6.4	0.289	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		509	5.0	0.289	2.7	NA	0.0	0.0	0.00	0.29	55.9
North: Cowper Street (N)											
8	T	706	1.3	0.544	7.1	LOS A	9.8	69.4	0.91	0.00	45.3
9	R	135	0.0	0.544	15.5	LOS C	9.8	69.4	0.91	1.13	45.1
Approach		841	1.1	0.544	8.4	NA	9.8	69.4	0.91	0.18	45.2
West: Morphett Street											
10	L	76	5.6	1.191	281.1	LOS F	24.5	185.3	1.00	3.21	6.9
12	R	84	12.5	1.191	281.7	LOS F	24.5	185.3	1.00	2.41	6.8
Approach		160	9.2	1.191	281.4	LOS F	24.5	185.3	1.00	2.79	6.8
All Vehicles		1511	3.3	1.191	35.4	NA	24.5	185.3	0.61	0.49	29.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:06:58 AM
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MOVEMENT SUMMARY

Site: 1 PM

1- Northbourne Avenue - Antill Street - Mouat Street
2012 PM
Signals - Fixed Time   Cycle Time = 130 seconds (User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	498	2.1	0.648	17.4	LOS B	14.1	100.2	0.55	0.76	40.7
2	T	1712	3.2	1.355	335.6	LOS F	130.7	940.0	0.98	2.21	5.8
3	R	173	3.7	0.817	74.2	LOS E	11.7	84.5	1.00	0.93	20.1
Approach		2382	3.0	1.355	250.2	LOS F	130.7	940.0	0.89	1.81	7.6
East: Antill Street											
4	L	227	2.3	0.364	15.3	LOS B	5.1	36.6	0.44	0.71	42.4
5	T	688	1.4	1.179	147.6	LOS F	70.7	500.3	1.00	1.38	11.6
6	R	499	1.1	1.179	116.9	LOS F	70.7	500.3	1.00	1.17	14.6
Approach		1415	1.4	1.179	115.5	LOS F	70.7	500.3	0.91	1.20	14.3
North: Northbourne Avenue (N)											
7	L	219	1.0	0.232	15.3	LOS B	5.1	36.1	0.42	0.70	42.4
8	T	685	4.6	0.435	40.1	LOS D	11.7	85.4	0.86	0.73	27.5
9	R	167	0.6	0.775	72.1	LOS E	11.1	77.8	1.00	0.89	20.4
Approach		1072	3.2	0.775	40.0	LOS D	11.7	85.4	0.79	0.75	27.9
West: Mouat Street (W)											
10	L	247	1.7	1.146	179.6	LOS F	47.4	336.7	1.00	1.32	10.2
11	T	460	1.8	1.146	199.4	LOS F	47.4	336.7	1.00	1.51	9.1
12	R	256	2.5	1.011	119.9	LOS F	23.5	168.3	1.00	1.25	14.3
Approach		963	2.0	1.146	173.2	LOS F	47.4	336.7	1.00	1.39	10.4
All Vehicles		5832	2.5	1.355	166.2	LOS F	130.7	940.0	0.90	1.40	10.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 2 PM

Northbourne Avenue Service Road - Antill Street
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	16	0.0	0.030	12.7	LOS B	0.1	0.7	0.57	0.78	44.3
Approach		16	0.0	0.030	12.7	LOS B	0.1	0.7	0.57	0.78	44.3
West: Antill Street (W)											
10	L	1	0.0	0.231	9.1	LOS A	0.0	0.0	0.00	1.19	48.1
11	T	842	2.1	0.231	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		843	2.1	0.231	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		859	2.1	0.231	0.2	NA	0.1	0.7	0.01	0.02	59.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 3 PM

Antill Street - Challis Street
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	224	0.9	0.718	29.8	LOS D	4.3	30.3	0.91	1.22	33.2
Approach		224	0.9	0.718	29.8	LOS D	4.3	30.3	0.91	1.22	33.2
East: Antil Street (W)											
4	L	16	6.7	0.021	8.2	LOS A	0.1	0.4	0.18	0.56	48.8
5	T	1206	1.6	0.329	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1222	1.6	0.329	0.1	NA	0.1	0.4	0.00	0.01	59.8
West: Antill Street											
11	T	742	2.4	0.204	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	99	0.0	0.272	18.9	LOS C	0.9	6.2	0.80	0.96	39.5
Approach		841	2.1	0.272	2.2	NA	0.9	6.2	0.09	0.11	56.5
All Vehicles		2287	1.7	0.718	3.8	NA	4.3	30.3	0.13	0.16	54.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 4 PM

Antill Street - Badham Street
2012 PM
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	388	0.5	0.939	45.2	LOS E	15.4	108.4	0.95	1.99	27.4
3	R	53	0.0	0.939	44.7	LOS E	15.4	108.4	0.95	1.85	27.4
Approach		441	0.5	0.939	45.2	LOS E	15.4	108.4	0.95	1.98	27.4
East: Antill Street (W)											
4	L	117	2.7	0.112	9.2	LOS A	0.4	3.0	0.35	0.64	47.9
5	T	786	2.1	0.215	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		903	2.2	0.215	1.2	NA	0.4	3.0	0.05	0.08	58.1
West: Antill Street (W)											
11	T	447	2.8	0.246	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	335	1.3	0.499	14.9	LOS B	2.8	19.6	0.70	1.00	42.6
Approach		782	2.2	0.499	6.4	NA	2.8	19.6	0.30	0.43	51.1
South West: Median (RT Stage 2)											
32	R	53	0.0	0.061	9.9	LOS A	0.2	1.4	0.45	0.71	32.1
Approach		53	0.0	0.061	9.9	LOS A	0.2	1.4	0.45	0.71	32.1
All Vehicles		2179	1.8	0.939	12.2	NA	15.4	108.4	0.33	0.60	45.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 5 PM

Antill Street - Dickson Shops Access Road
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	237	0.0	0.391	13.6	LOS B	2.1	14.4	0.64	0.92	43.8
Approach		237	0.0	0.391	13.6	LOS B	2.1	14.4	0.64	0.92	43.8
East: Antill Street (W)											
4	L	39	2.7	0.198	8.3	LOS A	0.0	0.0	0.00	1.02	49.0
5	T	677	3.4	0.198	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		716	3.4	0.198	0.5	NA	0.0	0.0	0.00	0.06	59.3
All Vehicles		953	2.5	0.391	3.7	NA	2.1	14.4	0.16	0.27	54.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 6 PM

Antill Street - Cowper Street
2012 PM
Signals - Fixed Time Cycle Time = 67 seconds (User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	400	4.2	0.742	33.1	LOS C	12.7	91.7	0.95	0.90	31.5
3	R	447	0.8	1.000 [3]	31.4	LOS C	13.9	97.9	0.98	0.86	32.3
Approach		847	2.0	1.000	32.2	LOS C	13.9	97.9	0.97	0.88	31.9
East: Antill Street (E)											
4	L	184	0.0	0.334	27.6	LOS C	4.7	33.0	0.81	0.79	34.1
5	T	411	2.8	0.445	23.3	LOS C	5.8	41.7	0.89	0.73	34.7
Approach		595	1.9	0.445	24.7	LOS C	5.8	41.7	0.86	0.75	34.5
West: Antill Street (W)											
11	T	360	2.3	0.389	22.9	LOS C	5.0	35.8	0.87	0.71	35.0
12	R	149	5.6	0.538	37.4	LOS D	4.7	34.8	0.96	0.80	29.7
Approach		509	3.3	0.538	27.2	LOS C	5.0	35.8	0.90	0.74	33.2
All Vehicles		1952	2.3	1.000	28.6	LOS C	13.9	97.9	0.92	0.80	33.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

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MOVEMENT SUMMARY

Site: 7 PM

Antill Street - Rosevear Place
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	66	0.0	0.165	12.0	LOS B	0.6	4.4	0.52	0.77	45.1
3	R	34	0.0	0.165	11.6	LOS B	0.6	4.4	0.52	0.83	45.4
Approach		100	0.0	0.165	11.9	LOS B	0.6	4.4	0.52	0.79	45.2
East: Antill Street (E)											
4	L	22	0.0	0.116	8.2	LOS A	0.0	0.0	0.00	1.02	49.0
5	T	400	1.8	0.116	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		422	1.7	0.116	0.4	NA	0.0	0.0	0.00	0.05	59.3
West: Antill Street											
11	T	611	1.2	0.207	0.9	LOS A	1.3	9.2	0.17	0.00	56.5
12	R	77	0.0	0.207	10.5	LOS B	1.3	9.2	0.45	0.88	48.0
Approach		687	1.1	0.207	2.0	NA	1.3	9.2	0.20	0.10	55.4
South West: Median (RT Stage 2)											
32	R	34	0.0	0.090	15.4	LOS C	0.3	2.0	0.61	0.85	25.5
Approach		34	0.0	0.090	15.4	LOS C	0.3	2.0	0.61	0.85	25.5
All Vehicles		1243	1.2	0.207	2.6	NA	1.3	9.2	0.17	0.16	55.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 8 PM

Badham Street - Dickson Shop Access Road
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	382	0.3	0.411	4.0	LOS A	4.4	31.0	0.69	0.00	47.6
3	R	186	0.0	0.411	12.5	LOS B	4.4	31.0	0.69	1.01	46.6
Approach		568	0.2	0.411	6.8	NA	4.4	31.0	0.69	0.33	47.3
East: Dickson Shop Access Road (E)											
4	L	125	0.0	0.531	23.3	LOS C	3.0	21.1	0.68	1.04	36.5
6	R	63	0.0	0.531	23.5	LOS C	3.0	21.1	0.68	1.04	36.4
Approach		188	0.0	0.531	23.4	LOS C	3.0	21.1	0.68	1.04	36.5
North: Badham Street (N)											
7	L	147	0.0	0.234	8.2	LOS A	0.0	0.0	0.00	0.89	49.0
8	T	275	2.3	0.234	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		422	1.5	0.234	2.9	NA	0.0	0.0	0.00	0.31	55.6
All Vehicles		1179	0.6	0.531	8.0	NA	4.4	31.0	0.44	0.44	47.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 9 PM

Cowper Street - Dickson Shop Access Road
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	172	0.6	0.449	8.2	LOS A	0.0	0.0	0.00	0.96	49.0
2	T	638	2.6	0.449	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		809	2.2	0.449	1.7	NA	0.0	0.0	0.00	0.20	57.3
North: Cowper Street (N)											
8	T	247	2.6	0.296	8.1	LOS A	2.8	20.2	0.84	0.00	44.8
9	R	91	1.2	0.296	16.6	LOS C	2.8	20.2	0.84	1.04	43.5
Approach		338	2.2	0.296	10.4	NA	2.8	20.2	0.84	0.28	44.5
West: Dickson Shop Access Road (W)											
10	L	214	0.0	0.834	38.0	LOS E	8.1	56.7	0.90	1.51	29.3
12	R	74	1.4	0.834	38.6	LOS E	8.1	56.7	0.90	1.44	29.2
Approach		287	0.4	0.834	38.2	LOS E	8.1	56.7	0.90	1.49	29.3
All Vehicles		1435	1.8	0.834	11.1	NA	8.1	56.7	0.38	0.48	45.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_PM.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 10 PM

Badham Street - Woolley Street
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	58	0.0	0.243	8.2	LOS A	0.0	0.0	0.00	1.00	49.0
2	T	389	0.0	0.243	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		447	0.0	0.243	1.1	NA	0.0	0.0	0.00	0.13	58.3
North: Badham Street (N)											
8	T	259	2.4	0.304	3.3	LOS A	2.4	17.4	0.61	0.00	48.7
9	R	143	0.0	0.304	11.8	LOS B	2.4	17.4	0.61	0.96	47.0
Approach		402	1.6	0.304	6.4	NA	2.4	17.4	0.61	0.34	48.0
West: Woolley Street											
10	L	126	0.8	0.418	18.1	LOS C	2.1	14.6	0.66	0.98	40.0
12	R	52	0.0	0.418	18.3	LOS C	2.1	14.6	0.66	0.98	39.9
Approach		178	0.6	0.418	18.2	LOS C	2.1	14.6	0.66	0.98	40.0
All Vehicles		1027	0.7	0.418	6.1	NA	2.4	17.4	0.35	0.36	50.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:20:06 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 11 PM

Badham Street - Dickson Place
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	346	0.0	0.386	3.2	LOS A	3.7	25.8	0.62	0.00	48.4
3	R	194	0.0	0.386	11.6	LOS B	3.7	25.8	0.62	0.95	47.2
Approach		540	0.0	0.386	6.2	NA	3.7	25.8	0.62	0.34	48.0
East: Dickson Place											
4	L	54	0.0	0.551	28.0	LOS D	3.0	20.7	0.75	1.01	33.7
6	R	101	0.0	0.551	28.3	LOS D	3.0	20.7	0.75	1.06	33.7
Approach		155	0.0	0.551	28.2	LOS D	3.0	20.7	0.75	1.05	33.7
North: Badham Street (N)											
7	L	166	3.8	0.207	8.3	LOS A	0.0	0.0	0.00	0.85	49.0
8	T	204	0.0	0.207	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		371	1.7	0.207	3.7	NA	0.0	0.0	0.00	0.38	54.5
All Vehicles		1065	0.6	0.551	8.5	NA	3.7	25.8	0.42	0.46	47.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:20:14 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_PM.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 12 PM

Cowper Street - Dickson Place
2012 PM
Signals - Fixed Time   Cycle Time = 92 seconds (User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	135	0.0	0.931	53.6	LOS D	46.1	326.9	1.00	1.14	25.2
2	T	675	1.7	0.931	45.4	LOS D	46.1	326.9	1.00	1.14	25.3
Approach		809	1.4	0.931	46.7	LOS D	46.1	326.9	1.00	1.14	25.3
North: Cowper Street (N)											
8	T	308	2.7	0.279	9.0	LOS A	6.4	46.2	0.50	0.44	46.3
9	R	21	0.0	0.098	29.0	LOS C	0.5	3.5	0.91	0.71	33.3
Approach		329	2.6	0.279	10.3	LOS B	6.4	46.2	0.53	0.45	45.1
West: Dickson Place (W)											
10	L	97	7.6	0.828	56.5	LOS E	10.7	77.3	1.00	0.94	23.5
12	R	120	0.0	0.828	56.3	LOS E	10.7	77.3	1.00	0.94	23.5
Approach		217	3.4	0.828	56.4	LOS E	10.7	77.3	1.00	0.94	23.5
All Vehicles		1356	2.0	0.931	39.4	LOS D	46.1	326.9	0.89	0.94	28.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:20:23 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_PM.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 13 PM

Challis Street - Cape Street
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
2	T	201	0.5	0.572	4.6	LOS A	6.4	45.1	0.72	0.00	45.8
3	R	449	0.0	0.572	13.1	LOS B	6.4	45.1	0.72	1.02	44.9
Approach		651	0.2	0.572	10.5	NA	6.4	45.1	0.72	0.70	45.2
East: Cape Street											
4	L	220	0.0	0.643	23.4	LOS C	5.1	35.8	0.66	1.11	36.4
6	R	61	0.0	0.643	23.7	LOS C	5.1	35.8	0.66	1.09	36.4
Approach		281	0.0	0.643	23.5	LOS C	5.1	35.8	0.66	1.10	36.4
North: Challis Street											
7	L	157	0.7	0.207	8.2	LOS A	0.0	0.0	0.00	0.86	49.0
8	T	217	0.5	0.207	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		374	0.6	0.207	3.4	NA	0.0	0.0	0.00	0.36	54.8
All Vehicles		1305	0.2	0.643	11.3	NA	6.4	45.1	0.50	0.69	45.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:20:43 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 14 PM

Cape Street - Woolley Street
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	217	0.0	0.159	4.1	LOS A	1.4	9.9	0.63	0.00	49.1
6	R	29	0.0	0.159	12.6	LOS B	1.4	9.9	0.63	1.02	47.1
Approach		246	0.0	0.159	5.1	NA	1.4	9.9	0.63	0.12	48.8
North: Woolley Street											
7	L	40	0.0	0.311	20.7	LOS C	1.3	8.8	0.74	0.96	38.1
9	R	57	0.0	0.311	20.9	LOS C	1.3	8.8	0.74	0.97	38.1
Approach		97	0.0	0.311	20.8	LOS C	1.3	8.8	0.74	0.96	38.1
West: Cape Street (W)											
10	L	136	0.8	0.328	8.2	LOS A	0.0	0.0	0.00	0.95	49.0
11	T	463	0.0	0.328	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		599	0.2	0.328	1.9	NA	0.0	0.0	0.00	0.21	57.1
All Vehicles		942	0.1	0.328	4.7	NA	1.4	9.9	0.24	0.27	52.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:20:54 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 15 PM

Cowper Street - Davenport Street
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	709	1.3	0.412	4.0	LOS A	6.1	43.4	0.74	0.00	47.9
3	R	24	0.0	0.412	12.4	LOS B	6.1	43.4	0.74	0.98	48.1
Approach		734	1.3	0.412	4.2	NA	6.1	43.4	0.74	0.03	48.0
East: Davenport Street (E)											
4	L	25	0.0	0.745	61.3	LOS F	4.1	28.7	0.90	1.24	22.2
6	R	87	0.0	0.745	61.5	LOS F	4.1	28.7	0.90	1.21	22.2
Approach		113	0.0	0.745	61.5	LOS F	4.1	28.7	0.90	1.22	22.2
North: Cowper Street											
7	L	97	0.0	0.239	8.2	LOS A	0.0	0.0	0.00	0.95	49.0
8	T	336	2.5	0.239	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		433	1.9	0.239	1.8	NA	0.0	0.0	0.00	0.21	57.1
All Vehicles		1279	1.4	0.745	8.5	NA	6.1	43.4	0.51	0.20	45.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:21:04 AM
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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 16 PM

Northbourne Avenue - Morphett Street
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	2455	2.8	0.450	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	423	0.0	0.916	39.8	LOS E	12.4	86.9	0.96	1.82	29.1
Approach		2878	2.4	0.916	5.9	NA	12.4	86.9	0.14	0.27	51.7
East: Morphett Street (E)											
4	L	358	0.6	1.006	75.8	LOS F	18.9	133.1	1.00	2.31	19.6
Approach		358	0.6	1.006	75.8	LOS F	18.9	133.1	1.00	2.31	19.6
North: Northbourne Avenue (N)											
7	L	41	0.0	0.210	8.2	LOS A	0.0	0.0	0.00	1.02	49.0
8	T	1095	3.8	0.210	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1136	3.7	0.210	0.3	NA	0.0	0.0	0.00	0.04	59.5
All Vehicles		4372	2.6	1.006	10.1	NA	18.9	133.1	0.17	0.37	47.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 29 March 2012 11:54:46 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 17 PM

Morphett Street - Challis Street
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	57	3.7	0.339	3.2	LOS A	2.0	14.0	0.56	0.00	48.1
6	R	274	0.4	0.339	11.5	LOS B	2.0	14.0	0.56	0.88	45.9
Approach		331	1.0	0.339	10.1	NA	2.0	14.0	0.56	0.73	46.2
North: Challis Street											
7	L	211	0.5	0.238	10.0	LOS B	1.0	6.8	0.42	0.72	47.0
9	R	303	0.0	0.930	54.0	LOS F	13.3	92.9	0.96	1.82	24.0
Approach		514	0.2	0.930	35.9	LOS E	13.3	92.9	0.74	1.37	30.1
West: Morphett Street (W)											
10	L	326	0.0	0.248	8.2	LOS A	0.0	0.0	0.00	0.74	49.0
11	T	116	0.0	0.248	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		442	0.0	0.248	6.0	NA	0.0	0.0	0.00	0.55	51.4
All Vehicles		1286	0.3	0.930	19.0	NA	13.3	92.9	0.44	0.92	39.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:21:20 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_PM.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 18 PM

Cowper Street - Morphett Street
2012 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	98	2.2	0.378	8.3	LOS A	0.0	0.0	0.00	1.00	49.0
2	T	589	1.4	0.378	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		687	1.5	0.378	1.2	NA	0.0	0.0	0.00	0.14	58.1
North: Cowper Street (N)											
8	T	267	3.9	0.213	5.3	LOS A	1.9	13.5	0.68	0.00	48.3
9	R	43	0.0	0.213	13.8	LOS B	1.9	13.5	0.68	1.03	46.0
Approach		311	3.4	0.213	6.5	NA	1.9	13.5	0.68	0.14	48.0
West: Morphett Street											
10	L	99	4.3	0.676	31.6	LOS D	4.3	30.9	0.86	1.23	32.0
12	R	100	1.1	0.676	31.8	LOS D	4.3	30.9	0.86	1.19	32.0
Approach		199	2.6	0.676	31.7	LOS D	4.3	30.9	0.86	1.21	32.0
All Vehicles		1197	2.2	0.676	7.6	NA	4.3	30.9	0.32	0.32	48.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:21:32 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_PM.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 1 MD

1- Northbourne Avenue - Antill Street - Mouat Street
2012 MD
Signals - Fixed Time   Cycle Time = 122 seconds (User-Given Phase Times)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	216	2.0	0.261	15.0	LOS B	4.5	32.2	0.44	0.71	42.6
2	T	832	4.2	0.695	41.7	LOS D	18.7	135.4	0.93	0.80	26.8
3	R	134	0.8	0.582	62.6	LOS E	7.7	54.4	0.99	0.80	22.4
Approach		1181	3.4	0.695	39.2	LOS D	18.7	135.4	0.85	0.78	28.1
East: Antill Street											
4	L	179	2.4	0.312	18.4	LOS B	4.6	32.6	0.51	0.72	40.0
5	T	493	0.6	0.897	60.0	LOS E	20.3	143.2	0.99	0.95	21.9
6	R	275	1.1	0.872	70.5	LOS E	18.2	128.6	1.00	0.99	20.7
Approach		946	1.1	0.897	55.2	LOS E	20.3	143.2	0.90	0.92	23.5
North: Northbourne Avenue (N)											
7	L	299	1.4	0.286	13.4	LOS B	6.0	42.2	0.41	0.71	43.9
8	T	1095	1.9	0.717	43.1	LOS D	19.8	140.6	0.96	0.84	26.3
9	R	223	1.9	0.979	66.7	LOS E	13.8	97.9	1.00	0.83	21.4
Approach		1617	1.8	0.979	40.9	LOS D	19.8	140.6	0.86	0.81	27.5
West: Mouat Street (W)											
10	L	212	1.0	0.805	58.0	LOS E	18.4	129.8	1.00	1.04	23.6
11	T	407	0.5	0.805	53.4	LOS D	18.4	129.8	1.00	0.97	23.1
12	R	306	1.7	0.805	62.7	LOS E	17.7	124.8	1.00	0.93	22.5
Approach		925	1.0	0.805	57.6	LOS E	18.4	129.8	1.00	0.97	23.0
All Vehicles		4669	1.9	0.979	46.7	LOS D	20.3	143.2	0.89	0.86	25.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2 MD

Northbourne Avenue Service Road - Antill Street
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	25	0.0	0.047	12.7	LOS B	0.2	1.2	0.57	0.80	44.4
Approach		25	0.0	0.047	12.7	LOS B	0.2	1.2	0.57	0.80	44.4
West: Antill Street (W)											
10	L	1	0.0	0.226	9.1	LOS A	0.0	0.0	0.00	1.19	48.1
11	T	829	0.8	0.226	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		831	0.8	0.226	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		856	0.7	0.226	0.4	NA	0.2	1.2	0.02	0.02	59.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 3 MD

Antill Street - Challis Street
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	117	1.8	0.234	13.8	LOS B	0.9	6.4	0.65	0.87	43.7
Approach		117	1.8	0.234	13.8	LOS B	0.9	6.4	0.65	0.87	43.7
East: Antil Street (W)											
4	L	22	0.0	0.028	8.0	LOS A	0.1	0.5	0.18	0.56	48.8
5	T	832	0.8	0.226	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		854	0.7	0.226	0.2	NA	0.1	0.5	0.00	0.01	59.6
West: Antill Street											
11	T	744	0.8	0.202	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	106	1.0	0.174	13.1	LOS B	0.6	4.0	0.62	0.87	44.2
Approach		851	0.9	0.202	1.6	NA	0.6	4.0	0.08	0.11	57.4
All Vehicles		1821	0.9	0.234	1.7	NA	0.9	6.4	0.08	0.11	57.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 4 MD

Antill Street - Badham Street
2012 MD
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	241	0.4	0.536	19.1	LOS C	3.3	23.4	0.68	1.15	40.4
3	R	55	0.0	0.536	18.6	LOS C	3.3	23.4	0.68	1.12	40.6
Approach		296	0.4	0.536	19.0	LOS C	3.3	23.4	0.68	1.14	40.4
East: Antill Street (W)											
4	L	153	0.7	0.158	9.6	LOS A	0.6	4.3	0.40	0.68	47.6
5	T	559	0.9	0.152	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		712	0.9	0.158	2.1	NA	0.6	4.3	0.09	0.15	56.8
West: Antill Street (W)											
11	T	364	1.2	0.198	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	406	0.3	0.471	12.4	LOS B	2.8	20.0	0.56	0.90	44.7
Approach		771	0.7	0.471	6.6	NA	2.8	20.0	0.29	0.48	50.8
South West: Median (RT Stage 2)											
32	R	55	0.0	0.058	9.4	LOS A	0.2	1.3	0.40	0.67	32.9
Approach		55	0.0	0.058	9.4	LOS A	0.2	1.3	0.40	0.67	32.9
All Vehicles		1833	0.7	0.536	6.9	NA	3.3	23.4	0.28	0.46	50.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 5 MD

Antill Street - Dickson Shops Access Road
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	202	0.5	0.279	11.0	LOS B	1.2	8.6	0.54	0.79	46.2
Approach		202	0.5	0.279	11.0	LOS B	1.2	8.6	0.54	0.79	46.2
East: Antill Street (W)											
4	L	40	0.0	0.152	8.2	LOS A	0.0	0.0	0.00	0.99	49.0
5	T	516	1.0	0.152	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		556	0.9	0.152	0.6	NA	0.0	0.0	0.00	0.07	59.0
All Vehicles		758	0.8	0.279	3.4	NA	1.2	8.6	0.15	0.26	54.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 6 MD

Antill Street - Cowper Street
2012 MD
Signals - Fixed Time Cycle Time = 59 seconds (User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	147	2.1	0.358	29.3	LOS C	3.7	26.2	0.88	0.79	33.2
3	R	334	1.3	0.805	36.1	LOS D	10.6	74.7	1.00	0.97	30.2
Approach		481	1.5	0.805	34.0	LOS C	10.6	74.7	0.96	0.91	31.1
East: Antill Street (E)											
4	L	242	0.9	0.583	30.6	LOS C	6.5	45.5	0.94	0.82	32.5
5	T	408	0.5	0.408	19.6	LOS B	5.0	35.0	0.87	0.71	37.0
Approach		651	0.6	0.583	23.7	LOS C	6.5	45.5	0.89	0.75	35.2
West: Antill Street (W)											
11	T	265	0.8	0.266	18.7	LOS B	3.1	21.7	0.83	0.66	37.6
12	R	154	1.4	0.472	32.4	LOS C	4.2	29.5	0.94	0.79	31.8
Approach		419	1.0	0.472	23.7	LOS C	4.2	29.5	0.87	0.71	35.2
All Vehicles		1551	1.0	0.805	26.9	LOS C	10.6	74.7	0.91	0.79	33.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 7 MD

Antill Street - Rosevear Place
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	22	0.0	0.042	11.6	LOS B	0.1	1.0	0.50	0.74	45.5
3	R	4	0.0	0.042	11.2	LOS B	0.1	1.0	0.50	0.77	45.8
Approach		26	0.0	0.042	11.5	LOS B	0.1	1.0	0.50	0.74	45.5
East: Antill Street (E)											
4	L	2	0.0	0.134	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	492	0.6	0.134	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		494	0.6	0.134	0.0	NA	0.0	0.0	0.00	0.00	59.9
West: Antill Street											
11	T	465	0.7	0.135	1.3	LOS A	1.0	6.9	0.22	0.00	55.7
12	R	15	0.0	0.135	10.7	LOS B	1.0	6.9	0.48	0.93	48.2
Approach		480	0.7	0.135	1.5	NA	1.0	6.9	0.23	0.03	55.5
South West: Median (RT Stage 2)											
32	R	4	0.0	0.009	12.4	LOS B	0.0	0.2	0.52	0.68	28.7
Approach		4	0.0	0.009	12.4	LOS B	0.0	0.2	0.52	0.68	28.7
All Vehicles		1004	0.6	0.135	1.1	NA	1.0	6.9	0.13	0.04	57.2

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 8 MD

Badham Street - Dickson Shop Access Road
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	255	0.0	0.276	3.7	LOS A	2.3	15.8	0.62	0.00	48.5
3	R	114	0.0	0.276	12.2	LOS B	2.3	15.8	0.62	0.98	46.8
Approach		368	0.0	0.276	6.4	NA	2.3	15.8	0.62	0.30	48.0
East: Dickson Shop Access Road (E)											
4	L	123	0.0	0.491	19.9	LOS C	2.7	19.0	0.68	1.03	38.7
6	R	77	0.0	0.491	20.2	LOS C	2.7	19.0	0.68	1.02	38.6
Approach		200	0.0	0.491	20.0	LOS C	2.7	19.0	0.68	1.02	38.6
North: Badham Street (N)											
7	L	201	0.0	0.277	8.2	LOS A	0.0	0.0	0.00	0.86	49.0
8	T	300	1.1	0.277	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		501	0.6	0.277	3.3	NA	0.0	0.0	0.00	0.35	55.0
All Vehicles		1069	0.3	0.491	7.5	NA	2.7	19.0	0.34	0.46	48.7

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 9 MD

Cowper Street - Dickson Shop Access Road
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	169	0.6	0.274	8.2	LOS A	0.0	0.0	0.00	0.89	49.0
2	T	323	2.3	0.274	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		493	1.7	0.274	2.8	NA	0.0	0.0	0.00	0.31	55.7
North: Cowper Street (N)											
8	T	259	1.6	0.297	3.5	LOS A	2.2	15.7	0.54	0.00	49.6
9	R	137	0.0	0.297	12.0	LOS B	2.2	15.7	0.54	0.93	46.6
Approach		396	1.1	0.297	6.5	NA	2.2	15.7	0.54	0.32	48.5
West: Dickson Shop Access Road (W)											
10	L	155	0.0	0.509	18.0	LOS C	3.3	23.4	0.67	0.98	40.0
12	R	92	0.0	0.509	18.6	LOS C	3.3	23.4	0.67	1.03	39.9
Approach		246	0.0	0.509	18.3	LOS C	3.3	23.4	0.67	1.00	39.9
All Vehicles		1135	1.1	0.509	7.4	NA	3.3	23.4	0.34	0.46	49.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 10 MD

Badham Street - Woolley Street
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	53	0.0	0.150	8.2	LOS A	0.0	0.0	0.00	0.97	49.0
2	T	222	0.0	0.150	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		275	0.0	0.150	1.6	NA	0.0	0.0	0.00	0.19	57.5
North: Badham Street (N)											
8	T	284	0.7	0.280	1.6	LOS A	1.9	13.6	0.47	0.00	50.9
9	R	137	0.0	0.280	10.1	LOS B	1.9	13.6	0.47	0.87	48.4
Approach		421	0.5	0.280	4.4	NA	1.9	13.6	0.47	0.28	50.1
West: Woolley Street											
10	L	113	0.9	0.247	12.4	LOS B	1.0	6.7	0.48	0.71	44.7
12	R	36	0.0	0.247	12.6	LOS B	1.0	6.7	0.48	0.86	44.6
Approach		148	0.7	0.247	12.4	LOS B	1.0	6.7	0.48	0.75	44.7
All Vehicles		844	0.4	0.280	4.9	NA	1.9	13.6	0.32	0.33	51.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 11 MD

Badham Street - Dickson Place
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	174	0.0	0.209	2.0	LOS A	1.3	9.2	0.48	0.00	50.4
3	R	115	0.9	0.209	10.5	LOS B	1.3	9.2	0.48	0.87	47.9
Approach		288	0.4	0.209	5.4	NA	1.3	9.2	0.48	0.35	49.4
East: Dickson Place											
4	L	106	0.0	0.424	15.9	LOS C	2.4	16.5	0.60	0.85	41.6
6	R	108	0.0	0.424	16.2	LOS C	2.4	16.5	0.60	0.96	41.5
Approach		215	0.0	0.424	16.0	LOS C	2.4	16.5	0.60	0.91	41.6
North: Badham Street (N)											
7	L	152	1.4	0.195	8.2	LOS A	0.0	0.0	0.00	0.85	49.0
8	T	200	0.0	0.195	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		352	0.6	0.195	3.6	NA	0.0	0.0	0.00	0.37	54.7
All Vehicles		855	0.4	0.424	7.3	NA	2.4	16.5	0.32	0.50	49.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:24:04 AM
SIDRA INTERSECTION 5.1.12.2089

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WE_MD.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 12 MD

Cowper Street - Dickson Place
2012 MD
Signals - Fixed Time   Cycle Time = 73 seconds (User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	187	0.0	0.809	33.8	LOS C	20.8	146.1	0.95	0.97	32.3
2	T	396	0.8	0.809	25.6	LOS C	20.8	146.1	0.95	0.93	32.7
Approach		583	0.5	0.809	28.2	LOS C	20.8	146.1	0.95	0.94	32.6
North: Cowper Street (N)											
8	T	285	1.8	0.278	8.9	LOS A	5.3	37.4	0.55	0.47	46.2
9	R	45	0.0	0.149	22.3	LOS C	0.8	5.5	0.85	0.74	37.1
Approach		331	1.6	0.278	10.7	LOS B	5.3	37.4	0.59	0.51	44.7
West: Dickson Place (W)											
10	L	95	4.4	0.859	49.8	LOS D	9.3	66.4	1.00	0.99	25.3
12	R	129	0.8	0.859	49.7	LOS D	9.3	66.4	1.00	0.99	25.3
Approach		224	2.3	0.859	49.8	LOS D	9.3	66.4	1.00	0.99	25.3
All Vehicles		1138	1.2	0.859	27.4	LOS C	20.8	146.1	0.86	0.83	33.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:24:13 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 13 MD

Challis Street - Cape Street
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
2	T	57	3.7	0.214	0.6	LOS A	1.1	7.5	0.27	0.00	53.5
3	R	233	0.0	0.214	9.1	LOS A	1.1	7.5	0.27	0.70	47.8
Approach		289	0.7	0.214	7.4	NA	1.1	7.5	0.27	0.56	48.8
East: Cape Street											
4	L	232	0.5	0.338	10.0	LOS B	1.6	10.9	0.29	0.63	47.0
6	R	61	0.0	0.338	10.3	LOS B	1.6	10.9	0.29	0.80	46.8
Approach		293	0.4	0.338	10.1	LOS B	1.6	10.9	0.29	0.66	47.0
North: Challis Street											
7	L	61	1.7	0.072	8.2	LOS A	0.0	0.0	0.00	0.83	49.0
8	T	68	0.0	0.072	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		129	0.8	0.072	3.9	NA	0.0	0.0	0.00	0.39	54.2
All Vehicles		712	0.6	0.338	7.9	NA	1.6	10.9	0.23	0.57	48.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 14 MD

Cape Street - Woolley Street
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	229	0.5	0.163	1.5	LOS A	1.1	7.8	0.45	0.00	51.8
6	R	41	0.0	0.163	10.0	LOS A	1.1	7.8	0.45	0.93	48.9
Approach		271	0.4	0.163	2.8	NA	1.1	7.8	0.45	0.14	51.3
North: Woolley Street											
7	L	47	0.0	0.215	13.3	LOS B	0.8	5.8	0.53	0.71	43.8
9	R	63	1.7	0.215	13.6	LOS B	0.8	5.8	0.53	0.87	43.7
Approach		111	1.0	0.215	13.5	LOS B	0.8	5.8	0.53	0.80	43.7
West: Cape Street (W)											
10	L	93	1.1	0.163	8.2	LOS A	0.0	0.0	0.00	0.90	49.0
11	T	203	0.0	0.163	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		296	0.4	0.163	2.6	NA	0.0	0.0	0.00	0.28	56.0
All Vehicles		677	0.5	0.215	4.4	NA	1.1	7.8	0.26	0.31	51.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 15 MD

Cowper Street - Davenport Street
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	501	1.1	0.291	2.8	LOS A	3.0	21.5	0.63	0.00	49.4
3	R	18	0.0	0.291	11.3	LOS B	3.0	21.5	0.63	0.94	48.8
Approach		519	1.0	0.291	3.1	NA	3.0	21.5	0.63	0.03	49.4
East: Davenport Street (E)											
4	L	21	0.0	0.426	27.5	LOS D	1.9	13.4	0.78	0.92	33.9
6	R	83	0.0	0.426	27.8	LOS D	1.9	13.4	0.78	1.02	33.9
Approach		104	0.0	0.426	27.8	LOS D	1.9	13.4	0.78	1.00	33.9
North: Cowper Street											
7	L	91	0.0	0.232	8.2	LOS A	0.0	0.0	0.00	0.95	49.0
8	T	332	1.6	0.232	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		422	1.2	0.232	1.8	NA	0.0	0.0	0.00	0.20	57.2
All Vehicles		1045	1.0	0.426	5.0	NA	3.0	21.5	0.39	0.20	49.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 16 MD

Northbourne Avenue - Morphett Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	1177	2.6	0.216	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	293	0.7	1.127	172.0	LOS F	29.8	209.8	1.00	2.95	10.7
Approach		1469	2.2	1.127	34.3	NA	29.8	209.8	0.20	0.59	31.0
East: RoadName											
4	L	222	0.9	1.192	234.1	LOS F	29.4	207.5	1.00	2.90	8.2
Approach		222	0.9	1.192	234.1	LOS F	29.4	207.5	1.00	2.90	8.2
North: Northbourne Avenue (N)											
7	L	25	4.2	0.289	8.3	LOS A	0.0	0.0	0.00	1.07	49.0
8	T	1562	1.7	0.289	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1587	1.7	0.289	0.1	NA	0.0	0.0	0.00	0.02	59.8
All Vehicles		3279	1.9	1.192	31.3	NA	29.8	209.8	0.16	0.47	32.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 17 MD

Morphett Street - Challis Street
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	26	4.0	0.084	1.4	LOS A	0.4	2.7	0.39	0.00	51.3
6	R	73	0.0	0.084	9.7	LOS A	0.4	2.7	0.39	0.74	47.7
Approach		99	1.1	0.084	7.5	NA	0.4	2.7	0.39	0.54	48.6
North: Challis Street											
7	L	94	0.0	0.097	9.3	LOS A	0.4	2.5	0.32	0.66	47.6
9	R	205	0.5	0.361	13.4	LOS B	1.9	13.7	0.56	0.86	43.8
Approach		299	0.4	0.361	12.1	LOS B	1.9	13.7	0.49	0.80	44.9
West: Morphett Street (W)											
10	L	218	1.0	0.176	8.2	LOS A	0.0	0.0	0.00	0.75	49.0
11	T	95	1.1	0.176	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		313	1.0	0.176	5.7	NA	0.0	0.0	0.00	0.53	51.9
All Vehicles		711	0.7	0.361	8.7	NA	1.9	13.7	0.26	0.64	48.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:25:08 AM
SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 18 MD

Cowper Street - Morphett Street
2012 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	40	0.0	0.274	8.2	LOS A	0.0	0.0	0.00	1.04	49.0
2	T	462	0.9	0.274	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		502	0.8	0.274	0.7	NA	0.0	0.0	0.00	0.08	58.9
North: Cowper Street (N)											
8	T	320	0.7	0.203	3.2	LOS A	1.7	11.7	0.52	0.00	50.8
9	R	25	4.2	0.203	11.8	LOS B	1.7	11.7	0.52	1.01	47.7
Approach		345	0.9	0.203	3.8	NA	1.7	11.7	0.52	0.07	50.6
West: Morphett Street											
10	L	79	0.0	0.352	18.2	LOS C	1.6	11.5	0.67	0.93	39.9
12	R	61	0.0	0.352	18.4	LOS C	1.6	11.5	0.67	0.96	39.8
Approach		140	0.0	0.352	18.3	LOS C	1.6	11.5	0.67	0.95	39.9
All Vehicles		987	0.7	0.352	4.3	NA	1.7	11.7	0.28	0.20	52.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:25:16 AM
SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 1 EV

1- Northbourne Avenue - Antill Street - Mouat Street
2012 EV
Signals - Fixed Time   Cycle Time = 121 seconds (User-Given Phase Times)

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	67	3.1	0.071	10.9	LOS B	0.9	6.3	0.29	0.66	46.3
2	T	419	1.5	0.400	41.4	LOS D	8.8	62.2	0.88	0.72	27.0
3	R	104	1.0	0.424	59.7	LOS E	5.8	40.8	0.96	0.78	23.1
Approach		591	1.6	0.424	41.2	LOS D	8.8	62.2	0.83	0.72	27.5
East: Antill Street											
4	L	171	0.0	0.222	11.6	LOS B	2.6	18.2	0.34	0.68	45.5
5	T	393	0.8	0.710	50.6	LOS D	13.7	96.2	0.97	0.82	24.1
6	R	219	1.4	0.691	59.0	LOS E	12.5	88.6	0.99	0.85	23.2
Approach		782	0.8	0.710	44.4	LOS D	13.7	96.2	0.84	0.80	26.6
North: Northbourne Avenue (N)											
7	L	207	0.0	0.184	11.1	LOS B	3.0	21.3	0.32	0.68	46.0
8	T	598	1.4	0.454	42.5	LOS D	10.1	71.6	0.90	0.75	26.6
9	R	98	0.0	0.395	59.7	LOS E	5.4	37.8	0.95	0.78	23.0
Approach		903	0.9	0.454	37.2	LOS D	10.1	71.6	0.77	0.74	28.9
West: Mouat Street (W)											
10	L	40	0.0	0.512	57.7	LOS E	10.8	75.7	0.92	0.89	24.0
11	T	386	0.5	0.512	47.1	LOS D	11.0	77.4	0.93	0.79	25.1
12	R	176	0.6	0.449	51.2	LOS D	9.1	63.7	0.91	0.80	25.4
Approach		602	0.5	0.512	49.0	LOS D	11.0	77.4	0.92	0.80	25.1
All Vehicles		2878	1.0	0.710	42.4	LOS D	13.7	96.2	0.83	0.77	27.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:25:54 AM
SIDRA INTERSECTION 5.1.12.2089

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 2 EV

Northbourne Avenue Service Road - Antill Street
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	16	0.0	0.026	11.6	LOS B	0.1	0.6	0.53	0.74	45.4
Approach		16	0.0	0.026	11.6	LOS B	0.1	0.6	0.53	0.74	45.4
West: Antill Street (W)											
10	L	2	0.0	0.193	9.1	LOS A	0.0	0.0	0.00	1.19	48.1
11	T	712	0.4	0.193	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		714	0.4	0.193	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		729	0.4	0.193	0.3	NA	0.1	0.6	0.01	0.02	59.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:26:07 AM
SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 3 EV

Antill Street - Challis Street
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	136	0.8	0.220	11.8	LOS B	0.8	5.9	0.57	0.83	45.4
Approach		136	0.8	0.220	11.8	LOS B	0.8	5.9	0.57	0.83	45.4
East: Antil Street (W)											
4	L	26	0.0	0.034	8.3	LOS A	0.1	0.6	0.24	0.57	48.5
5	T	647	0.8	0.176	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		674	0.8	0.176	0.3	NA	0.1	0.6	0.01	0.02	59.4
West: Antill Street											
11	T	546	0.6	0.148	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	169	0.0	0.222	11.6	LOS B	0.8	5.5	0.53	0.82	45.5
Approach		716	0.4	0.222	2.8	NA	0.8	5.5	0.13	0.19	55.8
All Vehicles		1525	0.6	0.222	2.5	NA	0.8	5.9	0.11	0.17	56.2

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Thursday, 7 June 2012 10:26:17 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WE_EV.sip
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MOVEMENT SUMMARY

Site: 4 EV

Antill Street - Badham Street
2012 EV
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	247	0.4	0.495	16.9	LOS C	3.1	21.9	0.62	1.09	41.9
3	R	69	0.0	0.495	16.5	LOS C	3.1	21.9	0.62	1.09	42.2
Approach		317	0.3	0.495	16.8	LOS C	3.1	21.9	0.62	1.09	42.0
East: Antill Street (W)											
4	L	152	0.7	0.151	9.4	LOS A	0.6	4.1	0.39	0.66	47.7
5	T	415	0.8	0.113	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		566	0.7	0.151	2.5	NA	0.6	4.1	0.10	0.18	56.1
West: Antill Street (W)											
11	T	209	0.0	0.113	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	374	0.8	0.375	10.6	LOS B	1.9	13.4	0.45	0.76	46.5
Approach		583	0.5	0.375	6.8	NA	1.9	13.4	0.29	0.49	50.6
South West: Median (RT Stage 2)											
32	R	69	0.0	0.063	8.6	LOS A	0.2	1.5	0.30	0.63	33.6
Approach		69	0.0	0.063	8.6	LOS A	0.2	1.5	0.30	0.63	33.6
All Vehicles		1536	0.5	0.495	7.4	NA	3.1	21.9	0.29	0.50	49.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 5 EV

Antill Street - Dickson Shops Access Road
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	157	0.0	0.195	9.9	LOS A	0.8	5.6	0.47	0.71	47.3
Approach		157	0.0	0.195	9.9	LOS A	0.8	5.6	0.47	0.71	47.3
East: Antill Street (W)											
4	L	42	0.0	0.124	8.2	LOS A	0.0	0.0	0.00	0.97	49.0
5	T	412	1.0	0.124	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		454	0.9	0.124	0.8	NA	0.0	0.0	0.00	0.09	58.8
All Vehicles		611	0.7	0.195	3.1	NA	0.8	5.6	0.12	0.25	55.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Antill Street - Cowper Street
2012 EV
Signals - Fixed Time   Cycle Time = 51 seconds (User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	97	3.3	0.239	26.1	LOS C	2.0	14.7	0.85	0.77	35.0
3	R	166	1.3	0.405	26.6	LOS C	3.7	26.0	0.89	0.79	34.8
Approach		263	2.0	0.405	26.4	LOS C	3.7	26.0	0.87	0.78	34.8
East: Antill Street (E)											
4	L	89	1.2	0.218	25.9	LOS C	1.9	13.2	0.84	0.76	35.0
5	T	348	0.3	0.344	16.6	LOS B	3.6	25.3	0.84	0.69	39.0
Approach		438	0.5	0.344	18.5	LOS B	3.6	25.3	0.84	0.70	38.1
West: Antill Street (W)											
11	T	216	0.0	0.212	15.9	LOS B	2.1	15.0	0.81	0.64	39.6
12	R	55	0.0	0.226	30.6	LOS C	1.3	9.1	0.93	0.74	32.6
Approach		271	0.0	0.226	18.8	LOS B	2.1	15.0	0.83	0.66	38.0
All Vehicles		972	0.8	0.405	20.7	LOS C	3.7	26.0	0.85	0.71	37.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 7 EV

Antill Street - Rosevear Place
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	40	0.0	0.048	9.8	LOS A	0.2	1.2	0.38	0.67	47.2
3	R	1	0.0	0.048	9.4	LOS A	0.2	1.2	0.38	0.69	47.6
Approach		41	0.0	0.048	9.8	LOS A	0.2	1.2	0.38	0.68	47.3
East: Antill Street (E)											
4	L	2	0.0	0.083	8.2	LOS A	0.0	0.0	0.00	1.08	49.0
5	T	304	0.3	0.083	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		306	0.3	0.083	0.1	NA	0.0	0.0	0.00	0.01	59.9
West: Antill Street											
11	T	280	0.4	0.076	0.7	LOS A	0.5	3.3	0.18	0.00	56.6
12	R	1	0.0	0.076	9.4	LOS A	0.5	3.3	0.36	0.91	49.2
Approach		281	0.4	0.076	0.7	NA	0.5	3.3	0.18	0.00	56.5
South West: Median (RT Stage 2)											
32	R	1	0.0	0.002	10.1	LOS B	0.0	0.0	0.41	0.59	31.9
Approach		1	0.0	0.002	10.1	LOS B	0.0	0.0	0.41	0.59	31.9
All Vehicles		629	0.3	0.083	1.0	NA	0.5	3.3	0.11	0.05	57.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 8 EV

Badham Street - Dickson Shop Access Road
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	246	0.9	0.325	4.4	LOS A	2.8	19.9	0.66	0.00	47.8
3	R	152	0.0	0.325	12.9	LOS B	2.8	19.9	0.66	1.02	45.9
Approach		398	0.5	0.325	7.7	NA	2.8	19.9	0.66	0.39	47.1
East: Dickson Shop Access Road (E)											
4	L	126	0.0	0.666	28.4	LOS D	4.4	30.5	0.80	1.22	33.6
6	R	93	0.0	0.666	28.6	LOS D	4.4	30.5	0.80	1.16	33.5
Approach		219	0.0	0.666	28.5	LOS D	4.4	30.5	0.80	1.20	33.6
North: Badham Street (N)											
7	L	129	0.0	0.289	8.2	LOS A	0.0	0.0	0.00	0.94	49.0
8	T	397	0.8	0.289	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		526	0.6	0.289	2.0	NA	0.0	0.0	0.00	0.23	56.9
All Vehicles		1143	0.5	0.666	9.0	NA	4.4	30.5	0.38	0.47	47.2

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 9 EV

Cowper Street - Dickson Shop Access Road
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	126	0.0	0.168	8.2	LOS A	0.0	0.0	0.00	0.85	49.0
2	T	175	3.0	0.168	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		301	1.7	0.168	3.4	NA	0.0	0.0	0.00	0.36	54.8
North: Cowper Street (N)											
8	T	105	1.0	0.094	1.4	LOS A	0.5	3.6	0.30	0.00	53.9
9	R	40	2.6	0.094	9.9	LOS A	0.5	3.6	0.30	0.89	48.2
Approach		145	1.4	0.094	3.7	NA	0.5	3.6	0.30	0.25	52.2
West: Dickson Shop Access Road (W)											
10	L	89	0.0	0.190	10.2	LOS B	0.8	5.8	0.42	0.63	46.7
12	R	54	0.0	0.190	10.8	LOS B	0.8	5.8	0.42	0.80	46.4
Approach		143	0.0	0.190	10.4	LOS B	0.8	5.8	0.42	0.69	46.6
All Vehicles		589	1.3	0.190	5.2	NA	0.8	5.8	0.18	0.41	52.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 10 EV

Badham Street - Woolley Street
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	239	0.0	0.252	8.2	LOS A	0.0	0.0	0.00	0.81	49.0
2	T	215	0.0	0.252	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		454	0.0	0.252	4.3	NA	0.0	0.0	0.00	0.43	53.6
North: Badham Street (N)											
8	T	285	1.5	0.319	3.5	LOS A	2.7	19.4	0.62	0.00	48.4
9	R	143	0.0	0.319	12.0	LOS B	2.7	19.4	0.62	0.98	46.9
Approach		428	1.0	0.319	6.4	NA	2.7	19.4	0.62	0.33	47.9
West: Woolley Street											
10	L	160	1.3	0.690	25.7	LOS D	5.5	38.7	0.73	1.21	35.1
12	R	118	0.0	0.690	25.9	LOS D	5.5	38.7	0.73	1.17	35.0
Approach		278	0.8	0.690	25.8	LOS D	5.5	38.7	0.73	1.19	35.0
All Vehicles		1160	0.5	0.690	10.2	NA	5.5	38.7	0.40	0.57	45.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 11 EV

Badham Street - Dickson Place
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	253	0.0	0.280	3.0	LOS A	2.1	14.8	0.59	0.00	49.0
3	R	128	0.0	0.280	11.5	LOS B	2.1	14.8	0.59	0.94	47.3
Approach		381	0.0	0.280	5.9	NA	2.1	14.8	0.59	0.32	48.4
East: Dickson Place											
4	L	121	0.0	0.617	23.4	LOS C	4.2	29.3	0.72	1.12	36.4
6	R	121	0.0	0.617	23.7	LOS C	4.2	29.3	0.72	1.10	36.3
Approach		242	0.0	0.617	23.5	LOS C	4.2	29.3	0.72	1.11	36.3
North: Badham Street (N)											
7	L	185	1.7	0.242	8.2	LOS A	0.0	0.0	0.00	0.85	49.0
8	T	249	0.4	0.242	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		435	1.0	0.242	3.5	NA	0.0	0.0	0.00	0.36	54.7
All Vehicles		1058	0.4	0.617	8.9	NA	4.2	29.3	0.38	0.52	47.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 12 EV

Cowper Street - Dickson Place
2012 EV
Signals - Fixed Time   Cycle Time = 65 seconds (User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	205	0.0	0.669	28.0	LOS C	11.8	83.1	0.90	0.87	34.9
2	T	221	1.0	0.669	19.8	LOS B	11.8	83.1	0.90	0.79	35.5
Approach		426	0.5	0.669	23.8	LOS C	11.8	83.1	0.90	0.83	35.2
North: Cowper Street (N)											
8	T	142	0.7	0.143	8.1	LOS A	2.2	15.8	0.53	0.43	47.1
9	R	19	0.0	0.055	19.6	LOS B	0.3	2.1	0.79	0.70	38.9
Approach		161	0.7	0.143	9.4	LOS A	2.2	15.8	0.56	0.46	46.0
West: Dickson Place (W)											
10	L	66	4.8	0.551	36.5	LOS D	5.0	35.4	0.96	0.80	29.9
12	R	96	0.0	0.551	36.4	LOS D	5.0	35.4	0.96	0.80	29.9
Approach		162	1.9	0.551	36.4	LOS D	5.0	35.4	0.96	0.80	29.9
All Vehicles		749	0.8	0.669	23.4	LOS C	11.8	83.1	0.84	0.75	35.7

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 13 EV

Challis Street - Cape Street
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
2	T	84	0.0	0.279	1.2	LOS A	1.5	10.5	0.39	0.00	51.3
3	R	273	0.4	0.279	9.6	LOS A	1.5	10.5	0.39	0.74	47.6
Approach		357	0.3	0.279	7.6	NA	1.5	10.5	0.39	0.56	48.4
East: Cape Street											
4	L	266	0.0	0.498	13.3	LOS B	3.7	25.7	0.46	0.74	43.9
6	R	92	0.0	0.498	13.5	LOS B	3.7	25.7	0.46	0.91	43.8
Approach		358	0.0	0.498	13.3	LOS B	3.7	25.7	0.46	0.78	43.9
North: Challis Street											
7	L	105	0.0	0.118	8.2	LOS A	0.0	0.0	0.00	0.83	49.0
8	T	108	0.0	0.118	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		214	0.0	0.118	4.0	NA	0.0	0.0	0.00	0.41	54.0
All Vehicles		928	0.1	0.498	9.0	NA	3.7	25.7	0.32	0.61	47.6

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 14 EV

Cape Street - Woolley Street
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	238	0.0	0.226	2.2	LOS A	1.6	11.0	0.51	0.00	50.3
6	R	96	1.1	0.226	10.7	LOS B	1.6	11.0	0.51	0.91	48.1
Approach		334	0.3	0.226	4.6	NA	1.6	11.0	0.51	0.26	49.6
North: Woolley Street											
7	L	149	0.0	0.536	17.9	LOS C	3.6	25.2	0.64	0.95	40.1
9	R	119	0.0	0.536	18.2	LOS C	3.6	25.2	0.64	1.02	40.0
Approach		268	0.0	0.536	18.0	LOS C	3.6	25.2	0.64	0.98	40.1
West: Cape Street (W)											
10	L	172	0.6	0.202	8.2	LOS A	0.0	0.0	0.00	0.83	49.0
11	T	193	0.0	0.202	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		364	0.3	0.202	3.9	NA	0.0	0.0	0.00	0.39	54.2
All Vehicles		966	0.2	0.536	8.0	NA	3.6	25.2	0.35	0.51	48.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 15 EV

Cowper Street - Davenport Street
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	368	0.6	0.220	1.3	LOS A	1.8	12.9	0.43	0.00	52.2
3	R	23	0.0	0.220	9.7	LOS A	1.8	12.9	0.43	0.93	49.1
Approach		392	0.5	0.220	1.8	NA	1.8	12.9	0.43	0.05	52.0
East: Davenport Street (E)											
4	L	18	0.0	0.182	15.1	LOS C	0.7	4.8	0.55	0.64	42.2
6	R	58	0.0	0.182	15.4	LOS C	0.7	4.8	0.55	0.87	42.1
Approach		76	0.0	0.182	15.3	LOS C	0.7	4.8	0.55	0.81	42.1
North: Cowper Street											
7	L	58	0.0	0.135	8.2	LOS A	0.0	0.0	0.00	0.94	49.0
8	T	188	0.6	0.135	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		246	0.4	0.135	1.9	NA	0.0	0.0	0.00	0.22	57.0
All Vehicles		714	0.4	0.220	3.3	NA	1.8	12.9	0.30	0.19	52.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 16 EV

Northbourne Avenue - Morphett Street
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	722	1.5	0.131	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	315	0.3	0.553	16.8	LOS C	3.5	24.4	0.77	1.06	41.4
Approach		1037	1.1	0.553	5.1	NA	3.5	24.4	0.23	0.32	52.7
East: Morphett Street (E)											
4	L	191	0.0	0.432	17.3	LOS C	2.1	14.5	0.75	0.99	40.8
Approach		191	0.0	0.432	17.3	LOS C	2.1	14.5	0.75	0.99	40.8
North: Northbourne Avenue (N)											
7	L	18	0.0	0.173	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
8	T	938	1.0	0.173	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		956	1.0	0.173	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		2183	1.0	0.553	4.0	NA	3.5	24.4	0.18	0.25	54.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 17 EV

Morphett Street - Challis Street
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	18	0.0	0.097	1.5	LOS A	0.4	2.9	0.40	0.00	50.9
6	R	91	0.0	0.097	9.8	LOS A	0.4	2.9	0.40	0.73	47.5
Approach		108	0.0	0.097	8.4	NA	0.4	2.9	0.40	0.61	48.0
North: Challis Street											
7	L	117	0.0	0.119	9.2	LOS A	0.4	3.1	0.31	0.66	47.6
9	R	185	0.0	0.325	13.0	LOS B	1.6	11.3	0.55	0.84	44.1
Approach		302	0.0	0.325	11.5	LOS B	1.6	11.3	0.46	0.77	45.4
West: Morphett Street (W)											
10	L	258	0.4	0.182	8.2	LOS A	0.0	0.0	0.00	0.72	49.0
11	T	64	0.0	0.182	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		322	0.3	0.182	6.6	NA	0.0	0.0	0.00	0.58	50.8
All Vehicles		733	0.1	0.325	8.9	NA	1.6	11.3	0.25	0.66	48.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 18 EV

Cowper Street - Morphett Street
2012 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	39	0.0	0.198	8.2	LOS A	0.0	0.0	0.00	1.02	49.0
2	T	324	0.3	0.198	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		363	0.3	0.198	0.9	NA	0.0	0.0	0.00	0.11	58.6
North: Cowper Street (N)											
8	T	191	0.6	0.121	1.8	LOS A	0.8	5.7	0.41	0.00	52.6
9	R	18	0.0	0.121	10.3	LOS B	0.8	5.7	0.41	0.97	48.6
Approach		208	0.5	0.121	2.5	NA	0.8	5.7	0.41	0.08	52.2
West: Morphett Street											
10	L	68	1.5	0.209	12.6	LOS B	0.8	6.0	0.53	0.73	44.5
12	R	53	0.0	0.209	12.8	LOS B	0.8	6.0	0.53	0.87	44.4
Approach		121	0.9	0.209	12.7	LOS B	0.8	6.0	0.53	0.79	44.5
All Vehicles		693	0.5	0.209	3.4	NA	0.8	6.0	0.22	0.22	53.6

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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APPENDIX B 2031 DO NOTHING SIDRA RESULTS

MOVEMENT SUMMARY

Site: 1 AM

1- Northbourne Avenue - Antill Street - Mouat Street
Do Nothing 2031 AM
Signals - Fixed Time Cycle Time = 110 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	143	17.6	0.163	11.7	LOS B	1.9	15.4	0.34	0.68	45.9
2	T	622	20.9	0.603	38.0	LOS D	12.6	102.0	0.91	0.77	27.8
3	R	132	7.2	1.235	288.7	LOS F	18.4	137.1	1.00	1.57	6.8
Approach		897	16.0	1.235	70.6	LOS E	18.4	137.1	0.83	0.87	20.0
East: Antill Street											
4	L	721	3.7	1.000[3]	39.2	LOS D	29.9	216.2	1.00	0.99	29.1
5	T	641	5.9	1.570	336.3	LOS F	105.2	769.3	1.00	2.03	5.8
6	R	486	3.9	1.570	258.9	LOS F	105.2	769.3	1.00	1.66	7.6
Approach		1848	4.4	1.570	200.0	LOS F	105.2	769.3	1.00	1.53	9.3
North: Northbourne Avenue (N)											
7	L	225	13.1	0.262	16.0	LOS B	5.2	40.2	0.49	0.72	42.0
8	T	1753	7.4	1.256	296.1	LOS F	86.9	647.1	1.00	2.27	6.5
9	R	125	1.2	1.127	195.3	LOS F	13.8	97.9	1.00	1.37	9.6
Approach		2103	7.5	1.256	260.1	LOS F	86.9	647.1	0.95	2.05	7.3
West: Mouat Street (W)											
10	L	42	0.0	1.163	195.4	LOS F	54.2	390.4	1.00	1.47	9.6
11	T	777	3.8	1.163	199.1	LOS F	60.4	438.4	1.00	1.64	9.1
12	R	571	5.2	1.163	111.9	LOS F	60.4	438.4	1.00	1.23	15.1
Approach		1389	4.2	1.163	163.2	LOS F	60.4	438.4	1.00	1.47	10.9
All Vehicles		6238	7.1	1.570	193.4	LOS F	105.2	769.3	0.96	1.60	9.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	19.8	LOS B	0.1	0.1	0.60	0.60
P2	Across S approach	72	42.8	LOS E	0.2	0.2	0.88	0.88
P3	Across E approach	107	41.0	LOS E	0.3	0.3	0.86	0.86
P5	Across N approach	47	19.8	LOS B	0.1	0.1	0.60	0.60
P6	Across N approach	47	37.6	LOS D	0.1	0.1	0.83	0.83
P7	Across W approach	16	41.0	LOS E	0.0	0.0	0.86	0.86
All Pedestrians		361	33.9	LOS D			0.78	0.78

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 2 AM

Northbourne Avenue Service Road - Antill Street
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	451	0.0	1.580	555.6	LOS F	111.8	782.7	1.00	6.07	3.7
Approach		451	0.0	1.580	555.6	LOS F	111.8	782.7	1.00	6.07	3.7
West: Antill Street (W)											
10	L	1	0.0	0.364	9.1	LOS A	0.0	0.0	0.00	1.19	48.1
11	T	1295	6.2	0.364	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1296	6.2	0.364	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		1746	4.6	1.580	143.3	NA	111.8	782.7	0.26	1.57	12.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 3 AM

Antill Street - Challis Street
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	516	8.6	2.512	1396.8	LOS F	203.5	1529.3	1.00	7.48	1.5
Approach		516	8.6	2.512	1396.8	LOS F	203.5	1529.3	1.00	7.48	1.5
East: Antill Street (W)											
4	L	219	7.7	0.299	9.7	LOS A	1.0	7.2	0.38	0.68	47.7
5	T	1333	2.8	0.367	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1552	3.5	0.367	1.4	NA	1.0	7.2	0.05	0.10	57.9
West: Antill Street											
11	T	1483	1.8	0.416	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	262	9.9	1.005	86.4	LOS F	13.0	98.6	1.00	2.00	17.8
Approach		1745	4.6	1.005	13.0	NA	13.0	98.6	0.15	0.30	44.3
All Vehicles		3813	4.7	2.512	195.5	NA	203.5	1529.3	0.23	1.19	9.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 4 AM

Antill Street - Badham Street
Do Nothing 2031 AM
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	438	0.0	2.987	1827.6	LOS F	260.2	1843.6	1.00	8.40	1.2
3	R	162	5.2	2.987	1827.5	LOS F	260.2	1843.6	1.00	7.33	1.2
Approach		600	1.4	2.987	1827.6	LOS F	260.2	1843.6	1.00	8.11	1.2
East: Antill Street (W)											
4	L	181	3.5	0.190	9.8	LOS A	0.7	5.3	0.42	0.69	47.5
5	T	1158	4.9	0.323	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1339	4.7	0.323	1.3	NA	0.7	5.3	0.06	0.09	57.9
West: Antill Street (W)											
11	T	695	0.0	0.376	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	568	3.0	1.373	363.8	LOS F	104.9	752.9	1.00	6.17	5.5
Approach		1263	1.3	1.373	163.7	NA	104.9	752.9	0.45	2.78	10.9
South West: Median (RT Stage 2)											
32	R	162	5.2	0.264	13.1	LOS B	1.1	6.9	0.61	0.89	28.2
Approach		162	5.2	0.264	13.1	LOS B	1.1	6.9	0.61	0.89	28.2
All Vehicles		3364	2.9	2.987	388.6	NA	260.2	1843.6	0.40	2.57	5.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 5 AM

Antill Street - Dickson Shops Access Road
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	177	0.0	0.540	23.7	LOS C	2.7	18.6	0.85	1.07	36.5
Approach		177	0.0	0.540	23.7	LOS C	2.7	18.6	0.85	1.07	36.5
East: Antill Street (W)											
4	L	1	0.0	0.324	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	1158	5.5	0.324	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1159	5.4	0.324	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		1336	4.7	0.540	3.1	NA	2.7	18.6	0.11	0.14	55.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 2:37:10 PM
SIDRA INTERSECTION 5.1.10.2069

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_AM_DoNothing2031.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 6 AM

Antill Street - Cowper Street
Do Nothing 2031 AM
Signals - Fixed Time Cycle Time = 65 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	375	0.0	0.415	18.4	LOS B	7.3	52.3	0.65	0.80	39.9
3	R	391	5.4	1.000 [3]	38.0	LOS D	13.4	97.9	1.00	0.88	29.5
Approach		766	4.1	1.000	28.4	LOS C	13.4	97.9	0.83	0.84	33.8
East: Antill Street (E)											
4	L	389	0.0	0.958	60.8	LOS E	18.4	128.9	1.00	1.17	22.4
5	T	977	6.5	0.941	46.5	LOS D	22.2	163.8	1.00	1.25	25.3
Approach		1366	4.6	0.958	50.6	LOS D	22.2	163.8	1.00	1.23	24.4
West: Antill Street (W)											
11	T	623	1.4	0.581	21.7	LOS C	8.7	61.4	0.91	0.77	35.6
12	R	236	0.0	0.669	36.0	LOS D	7.4	51.9	0.98	0.86	30.2
Approach		859	1.0	0.669	25.6	LOS C	8.7	61.4	0.92	0.79	33.9
All Vehicles		2992	3.4	1.000	37.7	LOS D	22.2	163.8	0.93	1.00	28.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	26.8	LOS C	0.1	0.1	0.91	0.91
P3	Across E approach	107	26.8	LOS C	0.2	0.2	0.91	0.91
P4	Across E approach	33	24.1	LOS C	0.1	0.1	0.86	0.86
All Pedestrians		212	26.4	LOS C			0.90	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 7 AM

Antill Street - Rosevear Place
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	95	0.0	0.514	35.2	LOS E	2.0	13.8	0.92	1.06	30.4
3	R	1	0.0	0.514	34.8	LOS D	2.0	13.8	0.92	1.06	30.5
Approach		96	0.0	0.514	35.2	LOS E	2.0	13.8	0.92	1.06	30.4
East: Antill Street (E)											
4	L	57	0.0	0.368	8.2	LOS A	0.0	0.0	0.00	1.03	49.0
5	T	1272	3.6	0.368	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1328	3.5	0.368	0.4	NA	0.0	0.0	0.00	0.04	59.4
West: Antill Street											
11	T	851	4.2	0.376	4.5	LOS A	3.4	24.7	0.20	0.00	52.1
12	R	72	0.0	0.376	30.1	LOS D	3.4	24.7	1.00	1.06	34.3
Approach		922	3.9	0.376	6.5	NA	3.4	24.7	0.27	0.08	50.1
South West: Median (RT Stage 2)											
32	R	1	0.0	0.004	20.3	LOS C	0.0	0.1	0.73	0.77	21.6
Approach		1	0.0	0.004	20.3	LOS C	0.0	0.1	0.73	0.77	21.6
All Vehicles		2347	3.5	0.514	4.2	NA	3.4	24.7	0.14	0.10	53.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 8 AM

Badham Street - Dickson Shop Access Road
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	331	0.0	0.392	8.6	LOS A	4.8	33.4	0.95	0.00	43.9
3	R	124	0.0	0.392	17.0	LOS C	4.8	33.4	0.95	1.10	43.3
Approach		455	0.0	0.392	10.9	NA	4.8	33.4	0.95	0.30	43.7
East: Dickson Shop Access Road (E)											
4	L	185	0.0	2.454	1356.6	LOS F	158.6	1110.1	1.00	6.94	1.6
6	R	217	0.0	2.454	1356.9	LOS F	158.6	1110.1	1.00	5.79	1.6
Approach		402	0.0	2.454	1356.8	LOS F	158.6	1110.1	1.00	6.32	1.6
North: Badham Street (N)											
7	L	131	0.0	0.400	8.2	LOS A	0.0	0.0	0.00	0.97	49.0
8	T	589	3.6	0.400	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		720	2.9	0.400	1.5	NA	0.0	0.0	0.00	0.18	57.6
All Vehicles		1577	1.3	2.454	349.8	NA	158.6	1110.1	0.53	1.78	5.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 9 AM

Cowper Street - Dickson Shop Access Road
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	114	0.0	0.343	8.2	LOS A	0.0	0.0	0.00	0.97	49.0
2	T	497	5.9	0.343	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		611	4.8	0.343	1.5	NA	0.0	0.0	0.00	0.18	57.6
North: Cowper Street (N)											
8	T	493	0.0	0.441	6.8	LOS A	6.0	41.7	0.85	0.00	45.9
9	R	133	0.0	0.441	15.3	LOS C	6.0	41.7	0.85	1.09	44.9
Approach		625	0.0	0.441	8.6	NA	6.0	41.7	0.85	0.23	45.6
West: Dickson Shop Access Road (W)											
10	L	263	0.0	0.413	13.7	LOS B	2.4	16.5	0.64	0.94	43.6
12	R	1	0.0	0.413	14.3	LOS B	2.4	16.5	0.64	0.97	43.5
Approach		264	0.0	0.413	13.7	LOS B	2.4	16.5	0.64	0.94	43.6
All Vehicles		1500	2.0	0.441	6.6	NA	6.0	41.7	0.46	0.34	49.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 2:38:46 PM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 10 AM

Badham Street - Woolley Street
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	21	0.0	0.187	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
2	T	324	0.0	0.187	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		345	0.0	0.187	0.5	NA	0.0	0.0	0.00	0.06	59.2
North: Badham Street (N)											
8	T	718	2.9	0.467	3.6	LOS A	6.6	47.1	0.71	0.00	48.1
9	R	72	0.0	0.467	12.1	LOS B	6.6	47.1	0.71	1.02	48.0
Approach		789	2.7	0.467	4.4	NA	6.6	47.1	0.71	0.09	48.1
West: Woolley Street											
10	L	149	0.0	0.371	16.5	LOS C	1.7	12.0	0.60	0.87	41.2
12	R	19	0.0	0.371	16.8	LOS C	1.7	12.0	0.60	0.93	41.1
Approach		168	0.0	0.371	16.5	LOS C	1.7	12.0	0.60	0.88	41.2
All Vehicles		1303	1.6	0.467	4.9	NA	6.6	47.1	0.51	0.19	49.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 2:39:04 PM
SIDRA INTERSECTION 5.1.10.2069

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MOVEMENT SUMMARY

Site: 11 AM

Badham Street - Dickson Place
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	122	0.0	0.693	25.0	LOS C	5.5	43.1	1.00	0.00	32.1
3	R	179	23.5	0.693	34.4	LOS D	5.5	43.1	1.00	1.22	32.0
Approach		301	14.0	0.693	30.6	NA	5.5	43.1	1.00	0.73	32.0
East: Dickson Place											
4	L	124	30.5	1.326	350.1	LOS F	44.4	353.2	1.00	3.75	5.6
6	R	116	0.0	1.326	349.2	LOS F	44.4	353.2	1.00	3.52	5.6
Approach		240	15.8	1.326	349.6	LOS F	44.4	353.2	1.00	3.64	5.6
North: Badham Street (N)											
7	L	328	5.1	0.488	8.4	LOS A	0.0	0.0	0.00	0.88	49.0
8	T	543	0.8	0.488	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		872	2.4	0.488	3.2	NA	0.0	0.0	0.00	0.33	55.3
All Vehicles		1413	7.2	1.326	67.9	NA	44.4	353.2	0.38	0.98	20.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 2:39:22 PM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 12 AM

Cowper Street - Dickson Place
Do Nothing 2031 AM
Signals - Fixed Time   Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	223	0.0	0.885	53.6	LOS D	45.5	335.6	0.99	0.99	25.0
2	T	467	9.5	0.885	45.4	LOS D	45.5	335.6	0.99	0.98	25.1
Approach		691	6.4	0.885	48.0	LOS D	45.5	335.6	0.99	0.98	25.1
North: Cowper Street (N)											
8	T	507	1.7	0.515	20.3	LOS C	20.2	143.5	0.69	0.62	36.9
9	R	84	45.0	0.687	44.6	LOS D	3.1	30.0	1.00	0.84	27.4
Approach		592	7.8	0.687	23.8	LOS C	20.2	143.5	0.73	0.65	35.2
West: Dickson Place (W)											
10	L	208	20.2	0.905	72.9	LOS E	31.8	241.2	1.00	0.98	20.0
12	R	227	0.0	0.905	72.3	LOS E	31.8	241.2	1.00	0.98	20.0
Approach		436	9.7	0.905	72.6	LOS E	31.8	241.2	1.00	0.98	20.0
All Vehicles		1718	7.7	0.905	45.9	LOS D	45.5	335.6	0.90	0.87	26.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	19.9	LOS B	0.1	0.1	0.55	0.55
P2	Across S approach	72	59.1	LOS E	0.3	0.3	0.95	0.95
P7	Across W approach	16	8.9	LOS A	0.0	0.0	0.37	0.37
P8	Across W approach	38	59.1	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		198	40.8	LOS E			0.76	0.76

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Processed: Thursday, 7 June 2012 10:30:33 AM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 13 AM

Challis Street - Cape Street
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
2	T	789	2.1	0.808	31.6	LOS D	17.4	123.9	1.00	0.00	30.0
3	R	200	0.0	0.808	40.1	LOS E	17.4	123.9	1.00	1.55	29.9
Approach		989	1.7	0.808	33.3	NA	17.4	123.9	1.00	0.31	30.0
East: Cape Street											
4	L	560	0.0	2.362	1255.3	LOS F	235.7	1730.5	1.00	10.17	1.7
6	R	69	51.5	2.362	1257.7	LOS F	235.7	1730.5	1.00	7.32	1.7
Approach		629	5.7	2.362	1255.6	LOS F	235.7	1730.5	1.00	9.86	1.7
North: Challis Street											
7	L	112	37.7	0.427	9.6	LOS A	0.0	0.0	0.00	1.05	49.0
8	T	619	5.4	0.427	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		731	10.4	0.427	1.5	NA	0.0	0.0	0.00	0.16	58.0
All Vehicles		2349	5.5	2.362	350.9	NA	235.7	1730.5	0.69	2.82	5.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 2:40:11 PM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 14 AM

Cape Street - Woolley Street
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	566	6.7	0.320	2.3	LOS A	2.9	21.2	0.59	0.00	50.2
6	R	1	0.0	0.320	10.7	LOS B	2.9	21.2	0.59	0.99	49.2
Approach		567	6.7	0.320	2.3	NA	2.9	21.2	0.59	0.00	50.2
North: Woolley Street											
7	L	1	0.0	0.324	30.1	LOS D	1.2	8.6	0.84	0.86	32.6
9	R	61	0.0	0.324	30.4	LOS D	1.2	8.6	0.84	1.00	32.6
Approach		62	0.0	0.324	30.4	LOS D	1.2	8.6	0.84	1.00	32.6
West: Cape Street (W)											
10	L	109	0.0	0.187	8.2	LOS A	0.0	0.0	0.00	0.89	49.0
11	T	204	20.6	0.187	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		314	13.4	0.187	2.9	NA	0.0	0.0	0.00	0.31	55.6
All Vehicles		943	8.5	0.324	4.3	NA	2.9	21.2	0.41	0.17	50.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 15 AM

Cowper Street - Davenport Street
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	619	7.1	0.523	11.5	LOS B	10.5	77.7	1.00	0.00	41.8
3	R	112	5.7	0.523	20.2	LOS C	10.5	77.7	1.00	1.21	41.6
Approach		731	6.9	0.523	12.8	NA	10.5	77.7	1.00	0.18	41.7
East: Davenport Street (E)											
4	L	13	0.0	1.199	324.0	LOS F	14.9	104.0	1.00	2.28	6.0
6	R	76	0.0	1.199	324.3	LOS F	14.9	104.0	1.00	1.90	6.0
Approach		88	0.0	1.199	324.2	LOS F	14.9	104.0	1.00	1.96	6.0
North: Cowper Street											
7	L	122	0.0	0.402	8.2	LOS A	0.0	0.0	0.00	0.98	49.0
8	T	611	1.4	0.402	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		733	1.1	0.402	1.4	NA	0.0	0.0	0.00	0.16	57.8
All Vehicles		1552	3.8	1.199	25.2	NA	14.9	104.0	0.53	0.28	34.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 16 AM (Left-out)

Northbourne Avenue - Morphett Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
4	L	579	5.8	1.346	340.2	LOS F	104.5	767.8	1.00	5.92	5.9
Approach		579	5.8	1.346	340.2	LOS F	104.5	767.8	1.00	5.92	5.9
North: Northbourne Avenue (N)											
7	L	118	5.4	0.493	8.4	LOS A	0.0	0.0	0.00	1.01	49.0
8	T	742	8.5	0.493	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		860	8.1	0.493	1.1	NA	0.0	0.0	0.00	0.14	58.2
All Vehicles		1439	7.2	1.346	137.6	NA	104.5	767.8	0.40	2.46	12.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 16 AM (Right-in)

Northbourne Avenue - Morphett Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	1015	13.4	0.198	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	392	3.0	1.096	134.4	LOS F	31.1	223.4	1.00	3.20	13.0
Approach		1407	9.3	1.096	37.5	NA	31.1	223.4	0.28	0.89	29.7
North: Northbourne Avenue (N)											
7	L	118	5.4	0.469	8.4	LOS A	0.0	0.0	0.00	1.00	49.0
8	T	2389	5.4	0.469	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		2507	5.4	0.469	0.4	NA	0.0	0.0	0.00	0.05	59.4
All Vehicles		3915	6.8	1.096	13.7	NA	31.1	223.4	0.10	0.35	43.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 17 AM

Morphett Street - Challis Street
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	76	0.0	0.776	12.4	LOS B	8.3	58.0	0.99	0.00	38.8
6	R	459	0.0	0.776	20.7	LOS C	8.3	58.0	0.99	1.38	38.5
Approach		535	0.0	0.776	19.6	NA	8.3	58.0	0.99	1.18	38.6
North: Challis Street											
7	L	1175	0.0	1.624	579.4	LOS F	297.8	2120.2	1.00	10.05	3.5
9	R	153	6.7	1.074	166.2	LOS F	15.1	111.8	1.00	2.04	10.7
Approach		1328	2.5	1.624	531.7	LOS F	297.8	2120.2	1.00	9.12	3.8
West: Morphett Street (W)											
10	L	503	3.3	0.390	8.3	LOS A	0.0	0.0	0.00	0.74	49.0
11	T	177	3.6	0.390	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		680	3.4	0.390	6.1	NA	0.0	0.0	0.00	0.55	51.4
All Vehicles		2543	2.2	1.624	283.5	NA	297.8	2120.2	0.73	5.16	6.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 18 AM

Cowper Street - Morphett Street
Do Nothing 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	301	0.0	0.495	8.2	LOS A	0.0	0.0	0.00	0.89	49.0
2	T	566	8.9	0.495	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		867	5.8	0.495	2.8	NA	0.0	0.0	0.00	0.31	55.7
North: Cowper Street (N)											
8	T	467	1.8	0.511	14.8	LOS B	7.0	49.5	1.00	0.00	39.1
9	R	124	0.0	0.511	23.2	LOS C	7.0	49.5	1.00	1.15	38.9
Approach		592	1.4	0.511	16.6	NA	7.0	49.5	1.00	0.24	39.0
West: Morphett Street											
10	L	179	0.0	3.655	2444.6	LOS F	227.0	1619.5	1.00	7.05	0.9
12	R	293	3.6	3.655	2445.0	LOS F	227.0	1619.5	1.00	5.79	0.9
Approach		472	2.2	3.655	2444.8	LOS F	227.0	1619.5	1.00	6.27	0.9
All Vehicles		1931	3.6	3.655	603.6	NA	227.0	1619.5	0.55	1.74	3.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 1 PM

1- Northbourne Avenue - Antill Street - Mouat Street
Do Nothing 2031 PM
Signals - Fixed Time   Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	474	2.2	0.606	16.8	LOS B	12.7	90.9	0.53	0.75	41.2
2	T	1862	4.8	1.349	329.1	LOS F	141.6	1031.9	0.98	2.18	5.9
3	R	132	1.1	1.223	289.5	LOS F	19.4	137.1	1.00	1.48	6.9
Approach		2467	4.0	1.349	267.0	LOS F	141.6	1031.9	0.89	1.87	7.2
East: Antill Street											
4	L	371	1.1	0.631	17.6	LOS B	10.4	73.2	0.54	0.75	40.6
5	T	836	4.3	1.316	213.0	LOS F	105.4	766.7	1.00	1.64	8.6
6	R	518	5.3	1.316	161.7	LOS F	105.4	766.7	0.99	1.33	11.3
Approach		1724	3.9	1.316	155.6	LOS F	105.4	766.7	0.90	1.36	11.4
North: Northbourne Avenue (N)											
7	L	246	6.8	0.247	12.2	LOS B	4.4	32.4	0.34	0.68	45.2
8	T	855	7.0	0.499	38.1	LOS D	14.5	107.9	0.86	0.74	28.1
9	R	120	0.0	1.107	190.2	LOS F	13.8	96.8	1.00	1.29	9.8
Approach		1221	5.9	1.107	47.8	LOS D	14.5	107.9	0.77	0.78	25.3
West: Mouat Street (W)											
10	L	259	0.0	1.323	335.0	LOS F	70.0	501.4	1.00	1.61	5.9
11	T	476	6.6	1.323	353.2	LOS F	70.0	501.4	1.00	1.85	5.5
12	R	276	3.1	1.323	163.9	LOS F	55.9	412.5	1.00	1.39	11.2
Approach		1011	4.0	1.323	296.9	LOS F	70.0	501.4	1.00	1.66	6.6
All Vehicles		6423	4.3	1.349	200.1	LOS F	141.6	1031.9	0.89	1.49	9.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	24.6	LOS C	0.2	0.2	0.62	0.62
P2	Across S approach	72	40.8	LOS E	0.2	0.2	0.79	0.79
P3	Across E approach	107	40.0	LOS E	0.3	0.3	0.78	0.78
P5	Across N approach	47	24.6	LOS C	0.1	0.1	0.62	0.62
P6	Across N approach	47	54.5	LOS E	0.2	0.2	0.92	0.92
P7	Across W approach	16	40.0	LOS E	0.0	0.0	0.78	0.78
All Pedestrians		361	37.0	LOS D			0.75	0.75

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 2 PM

Northbourne Avenue Service Road - Antill Street
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	27	0.0	0.055	13.4	LOS B	0.2	1.4	0.60	0.83	43.7
Approach		27	0.0	0.055	13.4	LOS B	0.2	1.4	0.60	0.83	43.7
West: Antill Street (W)											
10	L	40	10.5	0.256	9.5	LOS A	0.0	0.0	0.00	1.13	48.1
11	T	874	5.3	0.256	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		914	5.5	0.256	0.4	NA	0.0	0.0	0.00	0.05	59.3
All Vehicles		941	5.4	0.256	0.8	NA	0.2	1.4	0.02	0.07	58.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 3 PM

Antill Street - Challis Street
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	272	23.3	2.117	1059.5	LOS F	97.3	816.6	1.00	4.98	2.0
Approach		272	23.3	2.117	1059.5	LOS F	97.3	816.6	1.00	4.98	2.0
East: Antill Street (W)											
4	L	32	53.3	0.070	10.9	LOS B	0.2	1.7	0.31	0.61	47.8
5	T	1472	0.4	0.399	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1503	1.5	0.399	0.2	NA	0.2	1.7	0.01	0.01	59.7
West: Antill Street											
11	T	752	0.6	0.206	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	149	22.7	1.057	151.6	LOS F	11.9	99.2	1.00	1.92	11.7
Approach		901	5.1	1.057	25.1	NA	11.9	99.2	0.17	0.32	35.6
All Vehicles		2676	5.0	2.117	116.1	NA	97.3	816.6	0.16	0.62	14.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 4 PM

Antill Street - Badham Street
Do Nothing 2031 PM
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	568	0.0	1.728	684.2	LOS F	182.4	1291.2	1.00	8.37	3.0
3	R	86	9.8	1.728	684.4	LOS F	182.4	1291.2	1.00	7.20	3.0
Approach		655	1.3	1.728	684.2	LOS F	182.4	1291.2	1.00	8.22	3.0
East: Antill Street (W)											
4	L	67	0.0	0.070	9.5	LOS A	0.3	1.8	0.38	0.65	47.7
5	T	931	2.3	0.255	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		998	2.1	0.255	0.6	NA	0.3	1.8	0.03	0.04	59.0
West: Antill Street (W)											
11	T	434	0.5	0.235	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	408	0.0	0.725	20.6	LOS C	5.3	37.3	0.85	1.22	38.3
Approach		842	0.3	0.725	10.0	NA	5.3	37.3	0.41	0.59	47.1
South West: Median (RT Stage 2)											
32	R	86	9.8	0.106	10.5	LOS B	0.4	2.7	0.46	0.73	31.8
Approach		86	9.8	0.106	10.5	LOS B	0.4	2.7	0.46	0.73	31.8
All Vehicles		2581	1.5	1.728	177.4	NA	182.4	1291.2	0.41	2.32	10.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 12:34:14 PM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 5 PM

Antill Street - Dickson Shops Access Road
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	229	0.0	0.415	14.8	LOS B	2.2	15.3	0.67	0.95	42.9
Approach		229	0.0	0.415	14.8	LOS B	2.2	15.3	0.67	0.95	42.9
East: Antill Street (W)											
4	L	1	0.0	0.213	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	773	2.7	0.213	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		774	2.7	0.213	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		1003	2.1	0.415	3.4	NA	2.2	15.3	0.15	0.22	54.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 2:46:24 PM
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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 6 PM

Antill Street - Cowper Street
Do Nothing 2031 PM
Signals - Fixed Time   Cycle Time = 70 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	323	0.9	0.461	25.1	LOS C	8.2	58.0	0.78	0.82	35.5
3	R	481	1.1	1.000 [3]	28.9	LOS C	13.9	97.9	0.98	0.87	33.5
Approach		804	1.0	1.000	27.4	LOS C	13.9	97.9	0.90	0.85	34.3
East: Antill Street (E)											
4	L	232	0.9	0.395	24.0	LOS C	5.5	39.0	0.73	0.79	36.1
5	T	526	3.6	0.926	47.9	LOS D	11.7	84.8	1.00	1.15	24.8
Approach		758	2.8	0.926	40.6	LOS D	11.7	84.8	0.92	1.04	27.5
West: Antill Street (W)											
11	T	385	2.7	0.674	32.5	LOS C	6.7	48.0	0.99	0.85	30.2
12	R	139	0.0	0.425	36.3	LOS D	4.4	30.6	0.93	0.79	30.0
Approach		524	2.0	0.674	33.5	LOS C	6.7	48.0	0.98	0.84	30.1
All Vehicles		2086	1.9	1.000	33.7	LOS C	13.9	97.9	0.93	0.91	30.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	20.1	LOS C	0.1	0.1	0.76	0.76
P3	Across E approach	107	29.3	LOS C	0.2	0.2	0.91	0.91
P4	Across E approach	13	26.6	LOS C	0.0	0.0	0.87	0.87
All Pedestrians		192	25.6	LOS C			0.85	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Processed: Thursday, 7 June 2012 10:40:19 AM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 7 PM

Antill Street - Rosevear Place
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	84	0.0	0.256	14.4	LOS B	1.0	7.3	0.61	0.89	42.9
3	R	42	0.0	0.256	14.0	LOS B	1.0	7.3	0.61	0.88	43.2
Approach		126	0.0	0.256	14.3	LOS B	1.0	7.3	0.61	0.89	43.0
East: Antill Street (E)											
4	L	17	0.0	0.154	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
5	T	539	3.5	0.154	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		556	3.4	0.154	0.2	NA	0.0	0.0	0.00	0.03	59.6
West: Antill Street											
11	T	589	2.1	0.216	1.2	LOS A	1.4	9.8	0.18	0.00	56.2
12	R	88	0.0	0.216	11.6	LOS B	1.4	9.8	0.56	0.91	47.0
Approach		678	1.9	0.216	2.5	NA	1.4	9.8	0.23	0.12	54.8
South West: Median (RT Stage 2)											
32	R	42	0.0	0.109	15.1	LOS C	0.4	2.4	0.60	0.85	25.8
Approach		42	0.0	0.109	15.1	LOS C	0.4	2.4	0.60	0.85	25.8
All Vehicles		1402	2.3	0.256	3.1	NA	1.4	9.8	0.19	0.18	54.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 12:34:25 PM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 8 PM

Badham Street - Dickson Shop Access Road
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	318	0.0	0.445	5.0	LOS A	4.8	33.4	0.73	0.00	46.6
3	R	232	0.0	0.445	13.4	LOS B	4.8	33.4	0.73	1.06	45.5
Approach		549	0.0	0.445	8.5	NA	4.8	33.4	0.73	0.45	46.1
East: Dickson Shop Access Road (E)											
4	L	76	0.0	0.739	42.8	LOS E	4.8	33.5	0.86	1.34	27.4
6	R	95	0.0	0.739	43.1	LOS E	4.8	33.5	0.86	1.23	27.4
Approach		171	0.0	0.739	43.0	LOS E	4.8	33.5	0.86	1.28	27.4
North: Badham Street (N)											
7	L	120	0.0	0.262	8.2	LOS A	0.0	0.0	0.00	0.93	49.0
8	T	358	0.0	0.262	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		478	0.0	0.262	2.1	NA	0.0	0.0	0.00	0.23	56.8
All Vehicles		1198	0.0	0.739	10.8	NA	4.8	33.5	0.46	0.48	45.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 2:48:27 PM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 9 PM

Cowper Street - Dickson Shop Access Road
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	95	0.0	0.384	8.2	LOS A	0.0	0.0	0.00	1.00	49.0
2	T	606	1.0	0.384	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		701	0.9	0.384	1.1	NA	0.0	0.0	0.00	0.14	58.2
North: Cowper Street (N)											
8	T	322	0.7	0.250	5.8	LOS A	2.5	17.3	0.72	0.00	47.9
9	R	51	0.0	0.250	14.2	LOS B	2.5	17.3	0.72	1.04	45.7
Approach		373	0.6	0.250	6.9	NA	2.5	17.3	0.72	0.14	47.6
West: Dickson Shop Access Road (W)											
10	L	200	1.1	0.594	22.0	LOS C	3.8	27.1	0.78	1.12	37.4
12	R	46	0.0	0.594	22.6	LOS C	3.8	27.1	0.78	1.11	37.3
Approach		246	0.9	0.594	22.1	LOS C	3.8	27.1	0.78	1.12	37.4
All Vehicles		1320	0.8	0.594	6.7	NA	3.8	27.1	0.35	0.32	49.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 2:48:45 PM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 10 PM

Badham Street - Woolley Street
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	147	0.0	0.171	8.2	LOS A	0.0	0.0	0.00	0.83	49.0
2	T	162	0.0	0.171	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		309	0.0	0.171	3.9	NA	0.0	0.0	0.00	0.40	54.2
North: Badham Street (N)											
8	T	272	0.0	0.366	2.3	LOS A	2.9	20.3	0.54	0.00	49.4
9	R	229	0.0	0.366	10.8	LOS B	2.9	20.3	0.54	0.87	47.6
Approach		501	0.0	0.366	6.2	NA	2.9	20.3	0.54	0.40	48.5
West: Woolley Street											
10	L	389	0.0	0.678	17.6	LOS C	7.4	51.8	0.61	1.00	40.4
12	R	65	0.0	0.678	17.8	LOS C	7.4	51.8	0.61	1.06	40.3
Approach		455	0.0	0.678	17.6	LOS C	7.4	51.8	0.61	1.01	40.4
All Vehicles		1265	0.0	0.678	9.7	NA	7.4	51.8	0.43	0.62	46.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 2:49:02 PM
SIDRA INTERSECTION 5.1.10.2069

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MOVEMENT SUMMARY

Site: 11 PM

Badham Street - Dickson Place
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	8	0.0	0.209	3.7	LOS A	0.9	7.9	0.54	0.00	48.1
3	R	135	31.3	0.209	13.4	LOS B	0.9	7.9	0.54	0.83	45.0
Approach		143	29.4	0.209	12.8	NA	0.9	7.9	0.54	0.78	45.2
East: Dickson Place											
4	L	53	68.0	0.752	28.1	LOS D	7.5	57.6	0.81	1.31	35.0
6	R	267	0.0	0.752	25.9	LOS D	7.5	57.6	0.81	1.30	35.0
Approach		320	11.2	0.752	26.2	LOS D	7.5	57.6	0.81	1.30	35.0
North: Badham Street (N)											
7	L	196	0.0	0.223	8.2	LOS A	0.0	0.0	0.00	0.83	49.0
8	T	206	0.0	0.223	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		402	0.0	0.223	4.0	NA	0.0	0.0	0.00	0.40	54.1
All Vehicles		865	9.0	0.752	13.7	NA	7.5	57.6	0.39	0.80	43.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 2:49:30 PM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 12 PM

Cowper Street - Dickson Place
Do Nothing 2031 PM
Signals - Fixed Time   Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	299	0.0	0.870	41.5	LOS D	49.9	354.4	0.94	0.96	28.9
2	T	543	2.7	0.870	33.3	LOS C	49.9	354.4	0.94	0.91	29.2
Approach		842	1.8	0.870	36.2	LOS D	49.9	354.4	0.94	0.93	29.1
North: Cowper Street (N)											
8	T	324	3.2	0.284	11.4	LOS B	9.0	65.1	0.48	0.42	44.1
9	R	84	42.5	0.655	42.3	LOS D	3.4	32.6	0.98	0.84	28.2
Approach		408	11.3	0.655	17.7	LOS B	9.0	65.1	0.59	0.51	39.6
West: Dickson Place (W)											
10	L	126	33.3	0.886	77.6	LOS E	20.3	160.1	1.00	0.96	19.3
12	R	156	0.0	0.886	76.4	LOS E	20.3	160.1	1.00	0.96	19.3
Approach		282	14.9	0.886	76.9	LOS E	20.3	160.1	1.00	0.96	19.3
All Vehicles		1533	6.7	0.886	38.8	LOS D	49.9	354.4	0.86	0.82	28.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	59.1	LOS E	0.3	0.3	0.95	0.95
P2	Across S approach	72	59.1	LOS E	0.3	0.3	0.95	0.95
P7	Across W approach	16	59.1	LOS E	0.1	0.1	0.95	0.95
P8	Across W approach	40	59.1	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		200	59.1	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Processed: Thursday, 7 June 2012 10:39:15 AM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 13 PM

Challis Street - Cape Street
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
2	T	299	11.3	0.762	8.3	LOS A	14.4	104.5	1.00	0.00	42.1
3	R	562	0.0	0.762	16.8	LOS C	14.4	104.5	1.00	1.29	42.2
Approach		861	3.9	0.762	13.9	NA	14.4	104.5	1.00	0.84	42.1
East: Cape Street											
4	L	375	0.0	1.718	694.1	LOS F	129.1	969.0	1.00	8.06	3.0
6	R	76	50.0	1.718	696.4	LOS F	129.1	969.0	1.00	4.95	3.0
Approach		451	8.4	1.718	694.4	LOS F	129.1	969.0	1.00	7.54	3.0
North: Challis Street											
7	L	69	60.6	0.211	10.4	LOS B	0.0	0.0	0.00	1.04	49.0
8	T	276	6.1	0.211	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		345	17.1	0.211	2.1	NA	0.0	0.0	0.00	0.21	57.4
All Vehicles		1657	7.9	1.718	196.5	NA	129.1	969.0	0.79	2.53	9.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 14 PM

Cape Street - Woolley Street
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	265	13.5	0.158	4.6	LOS A	1.6	12.6	0.68	0.00	49.0
6	R	1	0.0	0.158	13.1	LOS B	1.6	12.6	0.68	1.07	47.1
Approach		266	13.4	0.158	4.7	NA	1.6	12.6	0.68	0.00	49.0
North: Woolley Street											
7	L	1	0.0	0.581	28.6	LOS D	3.2	22.4	0.84	1.15	33.3
9	R	158	0.0	0.581	28.9	LOS D	3.2	22.4	0.84	1.11	33.3
Approach		159	0.0	0.581	28.9	LOS D	3.2	22.4	0.84	1.11	33.3
West: Cape Street (W)											
10	L	491	0.0	0.369	8.2	LOS A	0.0	0.0	0.00	0.73	49.0
11	T	141	29.9	0.369	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		632	6.7	0.369	6.4	NA	0.0	0.0	0.00	0.57	51.1
All Vehicles		1057	7.4	0.581	9.3	NA	3.2	22.4	0.30	0.51	46.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 15 PM

Cowper Street - Davenport Street
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Cowper Street											
2	T	726	1.4	0.415	4.6	LOS A	6.7	47.7	0.79	0.00	47.4
3	R	17	0.0	0.415	13.1	LOS B	6.7	47.7	0.79	1.01	47.7
Approach		743	1.4	0.415	4.8	NA	6.7	47.7	0.79	0.02	47.4
East: Davenport Street (E)											
4	L	11	0.0	1.096	203.8	LOS F	14.5	104.3	1.00	2.41	9.0
6	R	116	3.6	1.096	204.2	LOS F	14.5	104.3	1.00	1.96	9.0
Approach		126	3.3	1.096	204.2	LOS F	14.5	104.3	1.00	2.00	9.0
North: Cowper Street											
7	L	86	0.0	0.264	8.2	LOS A	0.0	0.0	0.00	0.97	49.0
8	T	392	2.7	0.264	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		478	2.2	0.264	1.5	NA	0.0	0.0	0.00	0.18	57.7
All Vehicles		1347	1.9	1.096	22.3	NA	14.5	104.3	0.53	0.26	35.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 16 AM (Left-out)

Northbourne Avenue - Morphett Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
4	L	262	2.0	0.625	22.4	LOS C	4.1	29.0	0.83	1.14	37.4
Approach		262	2.0	0.625	22.4	LOS C	4.1	29.0	0.83	1.14	37.4
North: Northbourne Avenue (N)											
7	L	115	9.2	0.509	8.5	LOS A	0.0	0.0	0.00	1.02	49.0
8	T	779	6.8	0.509	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		894	7.1	0.509	1.1	NA	0.0	0.0	0.00	0.13	58.3
All Vehicles		1156	5.9	0.625	5.9	NA	4.1	29.0	0.19	0.36	51.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 16 AM (Right-in)

Northbourne Avenue - Morphett Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	767	9.3	0.147	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	366	1.7	1.110	147.8	LOS F	31.5	223.5	1.00	3.20	12.1
Approach		1133	6.8	1.110	47.7	NA	31.5	223.5	0.32	1.03	26.1
North: Northbourne Avenue (N)											
7	L	115	9.2	0.484	8.5	LOS A	0.0	0.0	0.00	1.02	49.0
8	T	2492	4.2	0.484	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		2606	4.4	0.484	0.4	NA	0.0	0.0	0.00	0.04	59.4
All Vehicles		3739	5.2	1.110	14.7	NA	31.5	223.5	0.10	0.34	42.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

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MOVEMENT SUMMARY

Site: 17 PM

Morphett Street - Challis Street
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	55	3.8	0.378	5.4	LOS A	2.3	15.9	0.68	0.00	46.3
6	R	242	0.0	0.378	13.7	LOS B	2.3	15.9	0.68	0.98	43.9
Approach		297	0.7	0.378	12.2	NA	2.3	15.9	0.68	0.80	44.4
North: Challis Street											
7	L	295	0.0	0.371	11.4	LOS B	1.9	13.5	0.53	0.83	45.6
9	R	296	4.1	1.000 [3]	70.5	LOS F	15.4	111.8	1.00	1.92	20.3
Approach		592	2.8	1.000	41.0	LOS E	15.4	111.8	0.76	1.38	28.1
West: Morphett Street (W)											
10	L	499	6.8	0.356	8.4	LOS A	0.0	0.0	0.00	0.72	49.0
11	T	109	0.0	0.356	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		608	5.5	0.356	6.9	NA	0.0	0.0	0.00	0.59	50.6
All Vehicles		1497	3.5	1.000	21.4	NA	15.4	111.8	0.44	0.94	37.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 18 PM

Cowper Street - Morphett Street
Do Nothing 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	84	0.0	0.355	8.2	LOS A	0.0	0.0	0.00	1.00	49.0
2	T	562	1.5	0.355	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		646	1.3	0.355	1.1	NA	0.0	0.0	0.00	0.13	58.3
North: Cowper Street (N)											
8	T	299	3.5	0.296	5.6	LOS A	2.7	19.6	0.72	0.00	47.5
9	R	93	0.0	0.296	14.0	LOS B	2.7	19.6	0.72	1.04	45.5
Approach		392	2.7	0.296	7.6	NA	2.7	19.6	0.72	0.25	47.0
West: Morphett Street											
10	L	181	1.2	0.607	23.6	LOS C	3.9	27.2	0.78	1.14	36.3
12	R	55	0.0	0.607	23.8	LOS C	3.9	27.2	0.78	1.11	36.3
Approach		236	0.9	0.607	23.6	LOS C	3.9	27.2	0.78	1.14	36.3
All Vehicles		1274	1.7	0.607	7.2	NA	3.9	27.2	0.36	0.35	49.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 1 MD

1- Northbourne Avenue - Antill Street - Mouat Street
Do Nothing 2031 MD
Signals - Fixed Time Cycle Time = 90 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	101	6.3	0.108	12.7	LOS B	1.4	10.4	0.42	0.69	44.7
2	T	663	3.8	0.693	35.6	LOS D	11.7	84.9	0.96	0.82	29.0
3	R	139	1.5	0.717	52.9	LOS D	6.4	45.6	1.00	0.87	24.9
Approach		903	3.7	0.717	35.7	LOS D	11.7	84.9	0.90	0.82	29.4
East: Antill Street											
4	L	341	0.0	0.412	13.1	LOS B	5.5	38.5	0.49	0.73	44.2
5	T	474	5.8	0.898	45.8	LOS D	15.9	116.5	0.98	0.96	25.4
6	R	316	4.0	0.898	59.7	LOS E	15.9	116.5	1.00	1.08	23.1
Approach		1131	3.5	0.898	39.8	LOS D	15.9	116.5	0.84	0.92	28.3
North: Northbourne Avenue (N)											
7	L	389	3.2	0.373	13.8	LOS B	7.3	52.5	0.53	0.74	43.6
8	T	808	2.3	0.665	35.6	LOS D	11.2	79.8	0.97	0.83	28.9
9	R	175	0.0	0.893	62.2	LOS E	9.1	63.7	1.00	1.04	22.4
Approach		1373	2.3	0.893	32.8	LOS C	11.2	79.8	0.85	0.83	30.7
West: Mouat Street (W)											
10	L	145	0.0	0.886	58.2	LOS E	15.2	109.4	1.00	1.14	23.7
11	T	444	5.7	0.886	50.9	LOS D	15.2	109.4	1.00	1.09	23.8
12	R	152	4.2	0.532	45.5	LOS D	6.3	45.8	0.96	0.80	27.2
Approach		741	4.3	0.886	51.2	LOS D	15.2	109.4	0.99	1.04	24.4
All Vehicles		4147	3.3	0.898	38.6	LOS D	15.9	116.5	0.88	0.89	28.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	20.0	LOS B	0.1	0.1	0.67	0.67
P2	Across S approach	72	35.6	LOS D	0.2	0.2	0.89	0.89
P3	Across E approach	107	39.2	LOS D	0.3	0.3	0.93	0.93
P5	Across N approach	47	20.0	LOS B	0.1	0.1	0.67	0.67
P6	Across N approach	47	37.4	LOS D	0.1	0.1	0.91	0.91
P7	Across W approach	16	39.2	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		361	31.9	LOS D			0.83	0.83

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 2 MD

Northbourne Avenue Service Road - Antill Street
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	38	11.1	0.094	15.8	LOS C	0.3	2.5	0.66	0.89	42.1
Approach		38	11.1	0.094	15.8	LOS C	0.3	2.5	0.66	0.89	42.1
West: Antill Street (W)											
10	L	8	25.0	0.270	9.9	LOS A	0.0	0.0	0.00	1.22	48.1
11	T	964	3.9	0.270	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		973	4.1	0.270	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		1011	4.4	0.270	0.7	NA	0.3	2.5	0.02	0.04	58.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 3 MD

Antill Street - Challis Street
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	206	17.3	0.611	24.9	LOS C	3.4	27.6	0.85	1.13	36.1
Approach		206	17.3	0.611	24.9	LOS C	3.4	27.6	0.85	1.13	36.1
East: Antill Street (W)											
4	L	42	40.0	0.088	11.2	LOS B	0.2	2.2	0.37	0.64	47.1
5	T	941	0.4	0.255	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		983	2.1	0.255	0.5	NA	0.2	2.2	0.02	0.03	59.3
West: Antill Street											
11	T	760	0.3	0.206	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	244	16.4	0.576	21.4	LOS C	2.8	22.7	0.83	1.08	38.2
Approach		1004	4.2	0.576	5.2	NA	2.8	22.7	0.20	0.26	52.7
All Vehicles		2194	4.5	0.611	4.9	NA	3.4	27.6	0.18	0.24	53.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WE_MD_DoNothing2031.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 4 MD

Antill Street - Badham Street
Do Nothing 2031 MD
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	499	0.0	1.415	403.5	LOS F	132.8	939.5	1.00	7.21	5.0
3	R	158	5.3	1.415	403.4	LOS F	132.8	939.5	1.00	5.70	4.9
Approach		657	1.3	1.415	403.5	LOS F	132.8	939.5	1.00	6.85	5.0
East: Antill Street (W)											
4	L	154	0.0	0.204	11.2	LOS B	0.7	5.2	0.53	0.79	46.0
5	T	566	3.7	0.157	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		720	2.9	0.204	2.4	NA	0.7	5.2	0.11	0.17	56.3
West: Antill Street (W)											
11	T	267	0.8	0.145	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	600	0.0	0.702	15.2	LOS C	6.9	48.1	0.70	1.12	42.3
Approach		867	0.2	0.702	10.5	NA	6.9	48.1	0.48	0.78	46.5
South West: Median (RT Stage 2)											
32	R	158	5.3	0.152	9.2	LOS A	0.6	4.0	0.36	0.67	33.1
Approach		158	5.3	0.152	9.2	LOS A	0.6	4.0	0.36	0.67	33.1
All Vehicles		2402	1.7	1.415	115.5	NA	132.8	939.5	0.51	2.25	13.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Friday, 25 May 2012 3:13:19 PM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 5 MD

Antill Street - Dickson Shops Access Road
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	211	0.0	0.283	10.8	LOS B	1.3	8.8	0.54	0.78	46.4
Approach		211	0.0	0.283	10.8	LOS B	1.3	8.8	0.54	0.78	46.4
East: Antill Street (W)											
4	L	1	0.0	0.142	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	509	4.1	0.142	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		511	4.1	0.142	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		721	2.9	0.283	3.2	NA	1.3	8.8	0.16	0.23	55.2

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 6 MD

Antill Street - Cowper Street
Do Nothing 2031 MD
Signals - Fixed Time   Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	99	2.1	0.190	25.4	LOS C	2.2	15.7	0.78	0.76	35.3
3	R	326	0.6	0.684	29.0	LOS C	8.8	61.9	0.91	0.86	33.5
Approach		425	1.0	0.684	28.2	LOS C	8.8	61.9	0.88	0.84	33.9
East: Antill Street (E)											
4	L	185	2.3	0.356	26.5	LOS C	4.4	31.2	0.83	0.80	34.7
5	T	411	4.6	0.623	26.1	LOS C	5.9	43.2	0.97	0.82	33.1
Approach		596	3.9	0.623	26.2	LOS C	5.9	43.2	0.93	0.81	33.6
West: Antill Street (W)											
11	T	288	3.6	0.435	24.6	LOS C	3.9	28.5	0.93	0.75	33.9
12	R	139	0.0	0.364	30.5	LOS C	3.6	25.3	0.89	0.79	32.7
Approach		427	2.5	0.435	26.5	LOS C	3.9	28.5	0.92	0.76	33.5
All Vehicles		1448	2.6	0.684	26.9	LOS C	8.8	61.9	0.91	0.80	33.6

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	23.4	LOS C	0.1	0.1	0.88	0.88
P2	Across S approach	72	21.7	LOS C	0.1	0.1	0.85	0.85
P3	Across E approach	107	24.3	LOS C	0.2	0.2	0.90	0.90
P4	Across E approach	12	21.7	LOS C	0.0	0.0	0.85	0.85
All Pedestrians		263	23.2	LOS C			0.88	0.88

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Processed: Thursday, 7 June 2012 10:42:42 AM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 7 MD

Antill Street - Rosevear Place
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	40	0.0	0.060	11.1	LOS B	0.2	1.5	0.49	0.75	45.9
3	R	1	0.0	0.060	10.7	LOS B	0.2	1.5	0.49	0.78	46.3
Approach		41	0.0	0.060	11.1	LOS B	0.2	1.5	0.49	0.75	45.9
East: Antill Street (E)											
4	L	1	0.0	0.134	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	484	3.9	0.134	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		485	3.9	0.134	0.0	NA	0.0	0.0	0.00	0.00	60.0
West: Antill Street											
11	T	499	2.1	0.137	1.3	LOS A	1.0	7.4	0.24	0.00	55.5
12	R	1	0.0	0.137	10.7	LOS B	1.0	7.4	0.49	0.95	48.5
Approach		500	2.1	0.137	1.3	NA	1.0	7.4	0.24	0.00	55.5
South West: Median (RT Stage 2)											
32	R	1	0.0	0.002	12.8	LOS B	0.0	0.1	0.54	0.64	28.3
Approach		1	0.0	0.002	12.8	LOS B	0.0	0.1	0.54	0.64	28.3
All Vehicles		1027	2.9	0.137	1.1	NA	1.0	7.4	0.14	0.03	57.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 8 MD

Badham Street - Dickson Shop Access Road
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	352	0.0	0.658	14.4	LOS B	8.0	55.7	1.00	0.00	38.6
3	R	259	0.0	0.658	22.9	LOS C	8.0	55.7	1.00	1.25	38.4
Approach		611	0.0	0.658	18.0	NA	8.0	55.7	1.00	0.53	38.5
East: Dickson Shop Access Road (E)											
4	L	53	0.0	1.946	936.4	LOS F	59.4	416.1	1.00	4.10	2.2
6	R	120	0.0	1.946	936.6	LOS F	59.4	416.1	1.00	3.41	2.2
Approach		173	0.0	1.946	936.6	LOS F	59.4	416.1	1.00	3.62	2.2
North: Badham Street (N)											
7	L	164	0.0	0.410	8.2	LOS A	0.0	0.0	0.00	0.95	49.0
8	T	585	0.0	0.410	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		749	0.0	0.410	1.8	NA	0.0	0.0	0.00	0.21	57.2
All Vehicles		1533	0.0	1.946	113.5	NA	59.4	416.1	0.51	0.72	14.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 9 MD

Cowper Street - Dickson Shop Access Road
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	225	0.0	0.258	8.2	LOS A	0.0	0.0	0.00	0.83	49.0
2	T	238	1.8	0.258	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		463	0.9	0.258	4.0	NA	0.0	0.0	0.00	0.40	54.1
North: Cowper Street (N)											
8	T	189	2.2	0.249	2.9	LOS A	1.6	11.1	0.48	0.00	50.5
9	R	133	0.0	0.249	11.4	LOS B	1.6	11.1	0.48	0.89	46.9
Approach		322	1.3	0.249	6.4	NA	1.6	11.1	0.48	0.36	48.9
West: Dickson Shop Access Road (W)											
10	L	185	0.0	0.289	11.1	LOS B	1.3	9.0	0.51	0.72	46.0
12	R	25	0.0	0.289	11.7	LOS B	1.3	9.0	0.51	0.88	45.7
Approach		211	0.0	0.289	11.2	LOS B	1.3	9.0	0.51	0.74	46.0
All Vehicles		996	0.8	0.289	6.3	NA	1.6	11.1	0.26	0.46	50.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

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MOVEMENT SUMMARY

Site: 10 MD

Badham Street - Woolley Street
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	118	0.0	0.206	8.2	LOS A	0.0	0.0	0.00	0.90	49.0
2	T	257	0.0	0.206	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		375	0.0	0.206	2.6	NA	0.0	0.0	0.00	0.28	56.0
North: Badham Street (N)											
8	T	383	0.0	0.559	4.9	LOS A	7.5	52.8	0.78	0.00	45.7
9	R	341	0.0	0.559	13.3	LOS B	7.5	52.8	0.78	1.04	45.5
Approach		724	0.0	0.559	8.9	NA	7.5	52.8	0.78	0.49	45.6
West: Woolley Street											
10	L	366	0.0	1.009	89.5	LOS F	31.2	218.5	1.00	2.80	17.3
12	R	72	0.0	1.009	89.7	LOS F	31.2	218.5	1.00	2.12	17.2
Approach		438	0.0	1.009	89.5	LOS F	31.2	218.5	1.00	2.69	17.3
All Vehicles		1537	0.0	1.009	30.3	NA	31.2	218.5	0.65	1.07	32.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 11 MD

Badham Street - Dickson Place
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	67	0.0	0.306	6.2	LOS A	1.9	15.6	0.67	0.00	46.1
3	R	154	26.0	0.306	15.7	LOS C	1.9	15.6	0.67	0.98	43.4
Approach		221	18.1	0.306	12.8	NA	1.9	15.6	0.67	0.68	44.2
East: Dickson Place											
4	L	152	20.8	1.136	167.7	LOS F	44.3	331.1	1.00	3.74	10.7
6	R	253	0.0	1.136	167.2	LOS F	44.3	331.1	1.00	3.32	10.6
Approach		404	7.8	1.136	167.4	LOS F	44.3	331.1	1.00	3.48	10.7
North: Badham Street (N)											
7	L	179	0.0	0.289	8.2	LOS A	0.0	0.0	0.00	0.89	49.0
8	T	347	0.0	0.289	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		526	0.0	0.289	2.8	NA	0.0	0.0	0.00	0.30	55.7
All Vehicles		1152	6.2	1.136	62.5	NA	44.3	331.1	0.48	1.49	22.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 12 MD

Cowper Street - Dickson Place
Do Nothing 2031 MD
Signals - Fixed Time   Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	389	0.0	0.856	46.2	LOS D	43.2	307.3	0.96	0.95	27.0
2	T	326	3.9	0.856	38.0	LOS D	43.2	307.3	0.96	0.91	27.2
Approach		716	1.8	0.856	42.5	LOS D	43.2	307.3	0.96	0.93	27.1
North: Cowper Street (N)											
8	T	179	7.1	0.180	14.6	LOS B	5.4	40.2	0.52	0.44	41.3
9	R	63	50.0	0.508	40.3	LOS D	2.1	20.6	0.95	0.78	29.1
Approach		242	18.3	0.508	21.3	LOS C	5.4	40.2	0.63	0.53	37.3
West: Dickson Place (W)											
10	L	143	27.9	0.865	70.8	LOS E	23.1	178.4	1.00	0.94	20.5
12	R	192	0.0	0.865	69.9	LOS E	23.1	178.4	1.00	0.94	20.5
Approach		335	11.9	0.865	70.3	LOS E	23.1	178.4	1.00	0.94	20.5
All Vehicles		1293	7.5	0.865	45.7	LOS D	43.2	307.3	0.91	0.86	26.2

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	59.1	LOS E	0.3	0.3	0.95	0.95
P2	Across S approach	72	59.1	LOS E	0.3	0.3	0.95	0.95
P7	Across W approach	16	59.1	LOS E	0.1	0.1	0.95	0.95
P8	Across W approach	12	59.1	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		172	59.1	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Processed: Thursday, 7 June 2012 10:42:22 AM
SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 13 MD

Challis Street - Cape Street
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
2	T	95	13.3	0.482	3.7	LOS A	3.9	27.9	0.61	0.00	47.1
3	R	411	0.0	0.482	12.1	LOS B	3.9	27.9	0.61	0.94	45.4
Approach		505	2.5	0.482	10.5	NA	3.9	27.9	0.61	0.76	45.7
East: Cape Street											
4	L	459	0.0	1.366	369.5	LOS F	114.4	838.5	1.00	6.02	5.4
6	R	118	26.8	1.366	370.8	LOS F	114.4	838.5	1.00	4.33	5.3
Approach		577	5.5	1.366	369.8	LOS F	114.4	838.5	1.00	5.68	5.4
North: Challis Street											
7	L	173	23.2	0.211	9.0	LOS A	0.0	0.0	0.00	0.83	49.0
8	T	168	10.0	0.211	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		341	16.7	0.211	4.6	NA	0.0	0.0	0.00	0.42	53.9
All Vehicles		1423	7.1	1.366	154.7	NA	114.4	838.5	0.62	2.67	11.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 14 MD

Cape Street - Woolley Street
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	377	8.4	0.216	4.4	LOS A	2.3	17.1	0.70	0.00	48.7
6	R	1	0.0	0.216	12.8	LOS B	2.3	17.1	0.70	1.06	47.5
Approach		378	8.4	0.216	4.4	NA	2.3	17.1	0.70	0.00	48.7
North: Woolley Street											
7	L	1	0.0	0.756	44.5	LOS E	4.8	33.4	0.93	1.37	26.8
9	R	160	0.0	0.756	44.8	LOS E	4.8	33.4	0.93	1.27	26.8
Approach		161	0.0	0.756	44.8	LOS E	4.8	33.4	0.93	1.27	26.8
West: Cape Street (W)											
10	L	354	0.0	0.338	8.2	LOS A	0.0	0.0	0.00	0.78	49.0
11	T	227	17.6	0.338	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		581	6.9	0.338	5.0	NA	0.0	0.0	0.00	0.48	52.8
All Vehicles		1120	6.4	0.756	10.5	NA	4.8	33.4	0.37	0.43	45.2

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

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MOVEMENT SUMMARY

Site: 15 MD

Cowper Street - Davenport Street
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	634	2.0	0.367	2.6	LOS A	4.0	28.6	0.64	0.00	49.3
3	R	21	0.0	0.367	11.1	LOS B	4.0	28.6	0.64	0.92	49.0
Approach		655	1.9	0.367	2.9	NA	4.0	28.6	0.64	0.03	49.3
East: Davenport Street (E)											
4	L	2	0.0	0.524	39.2	LOS E	2.3	16.1	0.89	0.95	28.7
6	R	88	0.0	0.524	39.5	LOS E	2.3	16.1	0.89	1.08	28.6
Approach		91	0.0	0.524	39.5	LOS E	2.3	16.1	0.89	1.07	28.6
North: Cowper Street											
7	L	97	2.2	0.205	8.3	LOS A	0.0	0.0	0.00	0.93	49.0
8	T	269	3.9	0.205	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		366	3.4	0.205	2.2	NA	0.0	0.0	0.00	0.25	56.6
All Vehicles		1112	2.3	0.524	5.6	NA	4.0	28.6	0.45	0.19	48.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

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MOVEMENT SUMMARY

Site: 16 AM (Left-out)

Northbourne Avenue - Morphett Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
4	L	387	3.3	0.487	12.3	LOS B	3.7	26.6	0.61	0.87	45.1
Approach		387	3.3	0.487	12.3	LOS B	3.7	26.6	0.61	0.87	45.1
North: Northbourne Avenue (N)											
7	L	29	14.3	0.234	8.7	LOS A	0.0	0.0	0.00	1.07	49.0
8	T	395	1.9	0.234	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		424	2.7	0.234	0.6	NA	0.0	0.0	0.00	0.07	59.1
All Vehicles		812	3.0	0.487	6.2	NA	3.7	26.6	0.29	0.46	51.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 16 AM (Right-in)

Northbourne Avenue - Morphett Street
2012 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	1023	2.7	0.188	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	417	3.0	0.426	11.4	LOS B	2.4	16.9	0.65	0.93	46.0
Approach		1440	2.8	0.426	3.3	NA	2.4	16.9	0.19	0.27	55.1
North: Northbourne Avenue (N)											
7	L	29	14.3	0.229	8.7	LOS A	0.0	0.0	0.00	1.07	49.0
8	T	1227	1.2	0.229	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1257	1.5	0.229	0.2	NA	0.0	0.0	0.00	0.03	59.7
All Vehicles		2697	2.2	0.426	1.9	NA	2.4	16.9	0.10	0.16	57.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 17 MD

Morphett Street - Challis Street
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	11	0.0	0.125	2.3	LOS A	0.5	3.6	0.48	0.00	49.3
6	R	105	0.0	0.125	10.6	LOS B	0.5	3.6	0.48	0.77	46.5
Approach		116	0.0	0.125	9.9	NA	0.5	3.6	0.48	0.70	46.8
North: Challis Street											
7	L	164	2.6	0.180	9.8	LOS A	0.7	5.0	0.38	0.70	47.3
9	R	377	3.4	0.742	22.5	LOS C	8.3	59.8	0.81	1.27	37.0
Approach		541	3.1	0.742	18.7	LOS C	8.3	59.8	0.68	1.10	39.6
West: Morphett Street (W)											
10	L	387	3.3	0.258	8.3	LOS A	0.0	0.0	0.00	0.70	49.0
11	T	59	7.1	0.258	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		446	3.8	0.258	7.2	NA	0.0	0.0	0.00	0.61	50.2
All Vehicles		1103	3.1	0.742	13.1	NA	8.3	59.8	0.38	0.86	44.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 18 MD

Cowper Street - Morphett Street
Do Nothing 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	38	0.0	0.335	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
2	T	573	1.8	0.335	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		611	1.7	0.335	0.5	NA	0.0	0.0	0.00	0.06	59.2
North: Cowper Street (N)											
8	T	240	4.4	0.170	4.1	LOS A	1.4	10.2	0.58	0.00	49.9
9	R	27	0.0	0.170	12.5	LOS B	1.4	10.2	0.58	1.01	46.9
Approach		267	3.9	0.170	5.0	NA	1.4	10.2	0.58	0.10	49.5
West: Morphett Street											
10	L	80	2.6	0.247	15.9	LOS C	1.0	7.0	0.65	0.90	41.7
12	R	27	0.0	0.247	16.1	LOS C	1.0	7.0	0.65	0.92	41.7
Approach		107	2.0	0.247	15.9	LOS C	1.0	7.0	0.65	0.90	41.7
All Vehicles		985	2.4	0.335	3.4	NA	1.4	10.2	0.23	0.17	53.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.10.2069

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 1 EV

1- Northbourne Avenue - Antill Street - Mouat Street
Do Nothing 2031 EV
Signals - Fixed Time Cycle Time = 85 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	53	0.0	0.046	11.3	LOS B	0.6	4.2	0.38	0.67	45.8
2	T	408	4.6	0.405	29.9	LOS C	6.1	44.7	0.88	0.72	31.5
3	R	76	0.0	0.522	50.5	LOS D	3.2	22.7	1.00	0.77	25.5
Approach		537	3.5	0.522	31.0	LOS C	6.1	44.7	0.85	0.72	31.4
East: Antill Street											
4	L	276	0.8	0.325	12.1	LOS B	3.8	26.7	0.45	0.72	45.1
5	T	461	3.2	0.818	39.0	LOS D	12.5	90.1	0.98	0.89	27.7
6	R	213	4.0	0.659	43.7	LOS D	8.6	62.3	0.98	0.85	27.6
Approach		949	2.7	0.818	32.2	LOS C	12.5	90.1	0.83	0.83	31.2
North: Northbourne Avenue (N)											
7	L	227	3.7	0.202	11.2	LOS B	2.8	20.1	0.40	0.70	46.0
8	T	718	2.1	0.557	31.5	LOS C	8.9	63.7	0.93	0.78	30.7
9	R	114	0.0	0.783	54.8	LOS D	5.2	36.5	1.00	0.90	24.2
Approach		1059	2.2	0.783	29.7	LOS C	8.9	63.7	0.82	0.77	32.0
West: Mouat Street (W)											
10	L	51	0.0	0.809	52.8	LOS D	11.1	79.5	1.00	1.00	25.4
11	T	446	3.8	0.809	43.7	LOS D	11.1	79.5	1.00	0.98	26.0
12	R	166	1.3	0.578	43.8	LOS D	6.6	46.9	0.97	0.81	27.7
Approach		663	2.9	0.809	44.5	LOS D	11.1	79.5	0.99	0.93	26.3
All Vehicles		3208	2.7	0.818	33.7	LOS C	12.5	90.1	0.86	0.81	30.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	19.1	LOS B	0.1	0.1	0.67	0.67
P2	Across S approach	72	34.0	LOS D	0.2	0.2	0.89	0.89
P3	Across E approach	107	36.7	LOS D	0.2	0.2	0.93	0.93
P5	Across N approach	47	19.1	LOS B	0.1	0.1	0.67	0.67
P6	Across N approach	47	35.8	LOS D	0.1	0.1	0.92	0.92
P7	Across W approach	16	36.7	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		361	30.2	LOS D			0.84	0.84

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 2 EV

Northbourne Avenue Service Road - Antill Street
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	40	0.0	0.068	12.1	LOS B	0.2	1.7	0.55	0.79	44.9
Approach		40	0.0	0.068	12.1	LOS B	0.2	1.7	0.55	0.79	44.9
West: Antill Street (W)											
10	L	2	0.0	0.208	9.1	LOS A	0.0	0.0	0.00	1.19	48.1
11	T	749	3.4	0.208	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		752	3.4	0.208	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		792	3.2	0.208	0.6	NA	0.2	1.7	0.03	0.04	59.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WE_EV_DoNothing2031.sip
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MOVEMENT SUMMARY

Site: 3 EV

Antill Street - Challis Street
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	196	11.8	0.401	15.9	LOS C	2.0	15.2	0.68	0.95	42.2
Approach		196	11.8	0.401	15.9	LOS C	2.0	15.2	0.68	0.95	42.2
East: Antil Street (W)											
4	L	21	40.0	0.045	11.6	LOS B	0.1	1.2	0.39	0.64	46.7
5	T	749	0.3	0.203	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		771	1.4	0.203	0.3	NA	0.1	1.2	0.01	0.02	59.5
West: Antill Street											
11	T	482	0.4	0.131	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	309	7.5	0.478	15.1	LOS C	2.5	18.3	0.69	0.99	42.6
Approach		792	3.2	0.478	5.9	NA	2.5	18.3	0.27	0.39	51.8
All Vehicles		1758	3.4	0.478	4.6	NA	2.5	18.3	0.20	0.29	53.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 4 EV

Antill Street - Badham Street
Do Nothing 2031 EV
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	411	0.0	0.922	37.1	LOS E	17.1	120.4	0.87	1.96	30.4
3	R	114	3.7	0.922	36.9	LOS E	17.1	120.4	0.87	1.74	30.5
Approach		524	0.8	0.922	37.0	LOS E	17.1	120.4	0.87	1.91	30.4
East: Antill Street (W)											
4	L	232	0.0	0.258	10.2	LOS B	1.0	7.2	0.46	0.73	47.0
5	T	444	1.9	0.122	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		676	1.2	0.258	3.5	NA	1.0	7.2	0.16	0.25	54.7
West: Antill Street (W)											
11	T	211	1.0	0.115	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	465	0.0	0.480	11.5	LOS B	3.1	21.9	0.50	0.83	45.6
Approach		676	0.3	0.480	7.9	NA	3.1	21.9	0.34	0.57	49.3
South West: Median (RT Stage 2)											
32	R	114	3.7	0.103	8.8	LOS A	0.4	2.6	0.31	0.64	33.5
Approach		114	3.7	0.103	8.8	LOS A	0.4	2.6	0.31	0.64	33.5
All Vehicles		1989	1.0	0.922	14.2	NA	17.1	120.4	0.42	0.82	43.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 5 EV

Antill Street - Dickson Shops Access Road
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	126	0.0	0.177	10.7	LOS B	0.7	4.9	0.52	0.76	46.5
Approach		126	0.0	0.177	10.7	LOS B	0.7	4.9	0.52	0.76	46.5
East: Antill Street (W)											
4	L	1	0.0	0.150	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	547	1.5	0.150	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		548	1.5	0.150	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		675	1.2	0.177	2.0	NA	0.7	4.9	0.10	0.14	56.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 6 EV

Antill Street - Cowper Street
Do Nothing 2031 EV
Signals - Fixed Time Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	122	0.0	0.433	30.1	LOS C	2.9	20.2	0.95	0.78	32.8
3	R	133	0.0	0.470	29.9	LOS C	3.2	22.1	0.95	0.78	33.0
Approach		255	0.0	0.470	30.0	LOS C	3.2	22.1	0.95	0.78	32.9
East: Antill Street (E)											
4	L	145	4.3	0.531	30.7	LOS C	3.5	25.5	0.96	0.80	32.5
5	T	432	2.0	0.537	19.6	LOS B	4.9	35.0	0.93	0.76	36.8
Approach		577	2.6	0.537	22.4	LOS C	4.9	35.0	0.94	0.77	35.6
West: Antill Street (W)											
11	T	251	2.5	0.313	18.5	LOS B	2.7	19.2	0.88	0.70	37.7
12	R	76	0.0	0.165	24.0	LOS C	1.5	10.4	0.81	0.75	36.2
Approach		326	1.9	0.313	19.7	LOS B	2.7	19.2	0.86	0.71	37.3
All Vehicles		1158	1.8	0.537	23.3	LOS C	4.9	35.0	0.92	0.76	35.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	18.5	LOS B	0.1	0.1	0.86	0.86
P2	Across S approach	72	16.8	LOS B	0.1	0.1	0.82	0.82
P3	Across E approach	107	19.4	LOS B	0.1	0.1	0.88	0.88
P4	Across E approach	7	16.8	LOS B	0.0	0.0	0.82	0.82
All Pedestrians		258	18.3	LOS B			0.86	0.86

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 7 EV

Antill Street - Rosevear Place
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	40	0.0	0.057	10.8	LOS B	0.2	1.4	0.46	0.73	46.3
3	R	1	0.0	0.057	10.4	LOS B	0.2	1.4	0.46	0.76	46.6
Approach		41	0.0	0.057	10.8	LOS B	0.2	1.4	0.46	0.73	46.3
East: Antill Street (E)											
4	L	1	0.0	0.121	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	442	1.9	0.121	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		443	1.9	0.121	0.0	NA	0.0	0.0	0.00	0.00	60.0
West: Antill Street											
11	T	307	2.1	0.085	1.1	LOS A	0.6	4.2	0.22	0.00	55.9
12	R	1	0.0	0.085	10.2	LOS B	0.6	4.2	0.44	0.93	48.8
Approach		308	2.0	0.085	1.1	NA	0.6	4.2	0.22	0.00	55.9
South West: Median (RT Stage 2)											
32	R	1	0.0	0.002	10.3	LOS B	0.0	0.0	0.43	0.60	31.5
Approach		1	0.0	0.002	10.3	LOS B	0.0	0.0	0.43	0.60	31.5
All Vehicles		794	1.9	0.121	1.0	NA	0.6	4.2	0.11	0.04	57.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 8 EV

Badham Street - Dickson Shop Access Road
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	276	0.0	0.313	7.1	LOS A	3.3	23.1	0.83	0.00	45.9
3	R	99	0.0	0.313	15.5	LOS C	3.3	23.1	0.83	1.06	44.4
Approach		375	0.0	0.313	9.3	NA	3.3	23.1	0.83	0.28	45.5
East: Dickson Shop Access Road (E)											
4	L	61	0.0	0.754	49.7	LOS E	4.3	30.4	0.92	1.29	25.2
6	R	82	0.0	0.754	49.9	LOS E	4.3	30.4	0.92	1.24	25.2
Approach		143	0.0	0.754	49.8	LOS E	4.3	30.4	0.92	1.26	25.2
North: Badham Street (N)											
7	L	99	0.0	0.380	8.2	LOS A	0.0	0.0	0.00	1.00	49.0
8	T	600	0.0	0.380	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		699	0.0	0.380	1.2	NA	0.0	0.0	0.00	0.14	58.1
All Vehicles		1217	0.0	0.754	9.4	NA	4.3	30.4	0.36	0.32	46.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 9 EV

Cowper Street - Dickson Shop Access Road
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	69	0.0	0.138	8.2	LOS A	0.0	0.0	0.00	0.92	49.0
2	T	183	0.0	0.138	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		253	0.0	0.138	2.3	NA	0.0	0.0	0.00	0.25	56.5
North: Cowper Street (N)											
8	T	168	3.8	0.137	1.2	LOS A	0.8	5.6	0.29	0.00	54.2
9	R	51	0.0	0.137	9.6	LOS A	0.8	5.6	0.29	0.91	48.5
Approach		219	2.9	0.137	3.1	NA	0.8	5.6	0.29	0.21	52.8
West: Dickson Shop Access Road (W)											
10	L	72	0.0	0.098	9.5	LOS A	0.4	2.8	0.35	0.62	47.6
12	R	13	0.0	0.098	10.0	LOS B	0.4	2.8	0.35	0.79	47.2
Approach		84	0.0	0.098	9.6	LOS A	0.4	2.8	0.35	0.64	47.5
All Vehicles		556	1.1	0.138	3.7	NA	0.8	5.6	0.17	0.29	53.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 10 EV

Badham Street - Woolley Street
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	255	0.0	0.203	8.2	LOS A	0.0	0.0	0.00	0.75	49.0
2	T	107	0.0	0.203	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		362	0.0	0.203	5.8	NA	0.0	0.0	0.00	0.53	51.8
North: Badham Street (N)											
8	T	349	0.0	0.617	5.4	LOS A	9.0	63.1	0.83	0.00	44.8
9	R	421	0.0	0.617	13.8	LOS B	9.0	63.1	0.83	1.07	44.9
Approach		771	0.0	0.617	10.0	NA	9.0	63.1	0.83	0.58	44.8
West: Woolley Street											
10	L	267	0.0	0.969	75.3	LOS F	22.2	155.2	0.72	2.15	19.5
12	R	93	0.0	0.969	75.5	LOS F	22.2	155.2	0.72	1.77	19.4
Approach		360	0.0	0.969	75.3	LOS F	22.2	155.2	0.72	2.05	19.5
All Vehicles		1493	0.0	0.969	24.7	NA	22.2	155.2	0.60	0.92	35.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 11 EV

Badham Street - Dickson Place
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	65	0.0	0.169	5.6	LOS A	1.0	8.4	0.62	0.00	47.6
3	R	72	32.4	0.169	15.4	LOS C	1.0	8.4	0.62	0.96	44.3
Approach		137	16.9	0.169	10.7	NA	1.0	8.4	0.62	0.50	45.8
East: Dickson Place											
4	L	112	17.0	0.942	49.6	LOS E	16.8	122.9	0.94	2.06	25.4
6	R	274	0.0	0.942	49.2	LOS E	16.8	122.9	0.94	1.93	25.4
Approach		385	4.9	0.942	49.4	LOS E	16.8	122.9	0.94	1.97	25.4
North: Badham Street (N)											
7	L	181	0.0	0.281	8.2	LOS A	0.0	0.0	0.00	0.88	49.0
8	T	331	0.0	0.281	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		512	0.0	0.281	2.9	NA	0.0	0.0	0.00	0.31	55.6
All Vehicles		1034	4.1	0.942	21.2	NA	16.8	122.9	0.43	0.95	37.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 12 EV

Cowper Street - Dickson Place
Do Nothing 2031 EV
Signals - Fixed Time   Cycle Time = 100 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	404	0.0	0.759	37.2	LOS D	23.3	164.1	0.93	0.89	30.0
2	T	135	3.1	0.759	29.0	LOS C	23.3	164.1	0.93	0.84	30.4
Approach		539	0.8	0.759	35.1	LOS D	23.3	164.1	0.93	0.88	30.1
North: Cowper Street (N)											
8	T	139	7.6	0.152	13.3	LOS B	3.5	26.0	0.55	0.45	42.3
9	R	61	31.0	0.339	30.3	LOS C	1.6	14.6	0.88	0.76	33.2
Approach		200	14.7	0.339	18.5	LOS B	3.5	26.0	0.65	0.55	39.1
West: Dickson Place (W)											
10	L	76	30.6	0.754	52.0	LOS D	13.5	101.2	0.99	0.89	24.9
12	R	200	0.0	0.754	51.0	LOS D	13.5	101.2	0.99	0.89	24.9
Approach		276	8.4	0.754	51.3	LOS D	13.5	101.2	0.99	0.89	24.9
All Vehicles		1015	5.6	0.759	36.2	LOS D	23.3	164.1	0.89	0.81	29.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	44.2	LOS E	0.2	0.2	0.94	0.94
P2	Across S approach	72	44.2	LOS E	0.2	0.2	0.94	0.94
P7	Across W approach	16	44.2	LOS E	0.0	0.0	0.94	0.94
P8	Across W approach	12	44.2	LOS E	0.0	0.0	0.94	0.94
All Pedestrians		172	44.2	LOS E			0.94	0.94

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 13 EV

Challis Street - Cape Street
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
2	T	122	6.9	0.637	5.6	LOS A	7.2	50.7	0.75	0.00	45.0
3	R	528	0.0	0.637	14.1	LOS B	7.2	50.7	0.75	1.10	43.7
Approach		651	1.3	0.637	12.5	NA	7.2	50.7	0.75	0.89	43.9
East: Cape Street											
4	L	526	0.0	1.607	586.7	LOS F	157.3	1131.1	1.00	8.13	3.5
6	R	76	25.0	1.607	588.0	LOS F	157.3	1131.1	1.00	5.31	3.5
Approach		602	3.1	1.607	586.9	LOS F	157.3	1131.1	1.00	7.77	3.5
North: Challis Street											
7	L	116	20.0	0.229	8.9	LOS A	0.0	0.0	0.00	0.94	49.0
8	T	280	3.0	0.229	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		396	8.0	0.229	2.6	NA	0.0	0.0	0.00	0.27	56.3
All Vehicles		1648	3.6	1.607	219.9	NA	157.3	1131.1	0.66	3.26	8.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 14 EV

Cape Street - Woolley Street
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	314	6.0	0.178	4.8	LOS A	2.0	14.4	0.70	0.00	48.6
6	R	1	0.0	0.178	13.3	LOS B	2.0	14.4	0.70	1.06	47.1
Approach		315	6.0	0.178	4.8	NA	2.0	14.4	0.70	0.00	48.6
North: Woolley Street											
7	L	1	0.0	0.980	80.5	LOS F	14.7	102.6	0.99	2.26	18.6
9	R	253	0.0	0.980	80.8	LOS F	14.7	102.6	0.99	1.98	18.5
Approach		254	0.0	0.980	80.8	LOS F	14.7	102.6	0.99	1.98	18.5
West: Cape Street (W)											
10	L	484	0.0	0.369	8.2	LOS A	0.0	0.0	0.00	0.74	49.0
11	T	160	14.5	0.369	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		644	3.6	0.369	6.2	NA	0.0	0.0	0.00	0.55	51.3
All Vehicles		1213	3.5	0.980	21.4	NA	14.7	102.6	0.39	0.71	37.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 15 EV

Cowper Street - Davenport Street
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	440	1.0	0.255	2.0	LOS A	2.4	16.9	0.54	0.00	50.7
3	R	17	0.0	0.255	10.4	LOS B	2.4	16.9	0.54	0.93	49.2
Approach		457	0.9	0.255	2.3	NA	2.4	16.9	0.54	0.03	50.7
East: Davenport Street (E)											
4	L	17	0.0	0.380	22.6	LOS C	1.7	12.2	0.73	0.83	36.8
6	R	97	0.0	0.380	22.9	LOS C	1.7	12.2	0.73	0.99	36.7
Approach		114	0.0	0.380	22.8	LOS C	1.7	12.2	0.73	0.96	36.7
North: Cowper Street											
7	L	61	10.3	0.189	8.6	LOS A	0.0	0.0	0.00	0.99	49.0
8	T	278	1.5	0.189	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		339	3.1	0.189	1.5	NA	0.0	0.0	0.00	0.18	57.7
All Vehicles		909	1.6	0.380	4.6	NA	2.4	16.9	0.36	0.20	50.6

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 16 EV

Northbourne Avenue - Morphett Street
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	669	3.2	0.123	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	504	1.7	1.043	88.8	LOS F	31.5	223.6	1.00	2.95	17.8
Approach		1173	2.5	1.043	38.2	NA	31.5	223.6	0.43	1.27	29.5
East: Morphett Street (E)											
4	L	343	2.5	0.916	43.7	LOS E	10.9	77.6	0.96	1.75	27.5
Approach		343	2.5	0.916	43.7	LOS E	10.9	77.6	0.96	1.75	27.5
North: Northbourne Avenue (N)											
7	L	46	0.0	0.201	8.2	LOS A	0.0	0.0	0.00	1.00	49.0
8	T	1053	1.8	0.201	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1099	1.7	0.201	0.3	NA	0.0	0.0	0.00	0.04	59.4
All Vehicles		2615	2.2	1.043	23.0	NA	31.5	223.6	0.32	0.82	36.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 17 EV

Morphett Street - Challis Street
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	13	0.0	0.190	3.4	LOS A	0.8	5.5	0.55	0.00	48.0
6	R	139	0.0	0.190	11.7	LOS B	0.8	5.5	0.55	0.85	45.5
Approach		152	0.0	0.190	11.0	NA	0.8	5.5	0.55	0.78	45.7
North: Challis Street											
7	L	272	0.0	0.324	10.6	LOS B	1.5	10.4	0.48	0.78	46.4
9	R	331	2.5	0.782	27.9	LOS D	8.3	59.1	0.84	1.36	33.9
Approach		602	1.4	0.782	20.1	LOS C	8.3	59.1	0.68	1.10	38.6
West: Morphett Street (W)											
10	L	469	1.8	0.317	8.3	LOS A	0.0	0.0	0.00	0.71	49.0
11	T	86	0.0	0.317	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		556	1.5	0.317	7.0	NA	0.0	0.0	0.00	0.60	50.4
All Vehicles		1309	1.3	0.782	13.5	NA	8.3	59.1	0.38	0.85	43.7

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 18 EV

Cowper Street - Morphett Street
Do Nothing 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	21	0.0	0.222	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
2	T	385	1.1	0.222	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		406	1.0	0.222	0.4	NA	0.0	0.0	0.00	0.05	59.3
North: Cowper Street (N)											
8	T	240	1.8	0.184	2.3	LOS A	1.2	8.9	0.45	0.00	51.7
9	R	51	0.0	0.184	10.7	LOS B	1.2	8.9	0.45	0.94	48.0
Approach		291	1.4	0.184	3.8	NA	1.2	8.9	0.45	0.16	51.0
West: Morphett Street											
10	L	72	0.0	0.219	13.6	LOS B	0.9	6.0	0.57	0.77	43.6
12	R	42	0.0	0.219	13.8	LOS B	0.9	6.0	0.57	0.88	43.5
Approach		114	0.0	0.219	13.7	LOS B	0.9	6.0	0.57	0.81	43.6
All Vehicles		811	1.0	0.222	3.5	NA	1.2	8.9	0.24	0.20	53.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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APPENDIX C 2031 MASTERPLAN SIDRA RESULTS

MOVEMENT SUMMARY

Site: 1 AM

1- Northbourne Avenue - Antill Street - Mouat Street
Master Plan 2031 AM
Signals - Fixed Time Cycle Time = 110 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	112	9.4	0.127	12.2	LOS B	1.6	12.3	0.36	0.68	45.3
2	T	666	24.6	0.757	44.9	LOS D	15.2	124.3	0.97	0.87	25.5
3	R	134	4.7	1.236	289.8	LOS F	18.8	137.1	1.00	1.57	6.8
Approach		912	15.9	1.236	76.9	LOS E	18.8	137.1	0.90	0.95	18.8
East: Antill Street											
4	L	707	4.8	0.874	32.6	LOS C	27.2	198.4	0.96	0.95	31.9
5	T	592	6.4	1.149	122.6	LOS F	57.6	420.8	0.99	1.34	13.4
6	R	594	2.8	1.149	102.9	LOS F	57.6	420.8	1.00	1.17	16.0
Approach		1893	4.7	1.149	82.8	LOS F	57.6	420.8	0.98	1.14	18.3
North: Northbourne Avenue (N)											
7	L	221	13.3	0.250	15.0	LOS B	4.7	36.3	0.46	0.71	42.9
8	T	1738	8.4	1.453	472.5	LOS F	110.1	826.1	1.00	2.75	4.3
9	R	125	1.1	1.127	195.2	LOS F	13.8	97.8	1.00	1.37	9.6
Approach		2084	8.3	1.453	407.3	LOS F	110.1	826.1	0.94	2.45	4.9
West: Mouat Street (W)											
10	L	61	0.0	1.397	397.8	LOS F	93.8	677.6	1.00	1.77	5.1
11	T	707	4.2	1.397	399.6	LOS F	95.0	691.3	1.00	2.00	5.0
12	R	693	4.9	1.397	239.9	LOS F	95.0	691.3	1.00	1.73	8.1
Approach		1461	4.3	1.397	323.8	LOS F	95.0	691.3	1.00	1.86	6.1
All Vehicles		6349	7.4	1.453	243.9	LOS F	110.1	826.1	0.96	1.71	7.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	17.5	LOS B	0.1	0.1	0.56	0.56
P2	Across S approach	72	37.6	LOS D	0.2	0.2	0.83	0.83
P3	Across E approach	107	44.6	LOS E	0.3	0.3	0.90	0.90
P5	Across N approach	47	17.5	LOS B	0.1	0.1	0.56	0.56
P6	Across N approach	47	39.3	LOS D	0.1	0.1	0.85	0.85
P7	Across W approach	16	44.6	LOS E	0.0	0.0	0.90	0.90
All Pedestrians		361	33.6	LOS D			0.77	0.77

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 2 AM

Northbourne Avenue Service Road - Antill Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	434	0.5	1.397	391.6	LOS F	85.8	603.0	1.00	5.30	5.1
Approach		434	0.5	1.397	391.6	LOS F	85.8	603.0	1.00	5.30	5.1
West: Antill Street (W)											
10	L	1	0.0	0.348	9.1	LOS A	0.0	0.0	0.00	1.19	48.1
11	T	1240	5.9	0.348	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1241	5.9	0.348	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		1675	4.5	1.397	101.4	NA	85.8	603.0	0.26	1.37	15.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 3 AM

Antill Street - Challis Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	497	9.3	2.478	1367.0	LOS F	194.6	1470.8	1.00	7.31	1.6
Approach		497	9.3	2.478	1367.0	LOS F	194.6	1470.8	1.00	7.31	1.6
East: Antil Street (W)											
4	L	93	20.5	0.147	9.8	LOS A	0.4	3.3	0.33	0.64	48.0
5	T	1398	3.0	0.385	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1491	4.1	0.385	0.6	NA	0.4	3.3	0.02	0.04	59.1
West: Antill Street											
11	T	1469	1.2	0.408	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	207	15.0	1.023	109.3	LOS F	12.4	97.8	1.00	1.97	15.0
Approach		1676	4.5	1.023	13.5	NA	12.4	97.8	0.12	0.24	43.8
All Vehicles		3663	5.0	2.478	191.8	NA	194.6	1470.8	0.20	1.12	9.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 4 AM

Antill Street - Badham Street
Master Plan 2031 AM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	562	0.0	2.130	1050.2	LOS F	219.4	1553.2	1.00	8.89	2.0
3	R	69	12.1	2.130	1050.6	LOS F	219.4	1553.2	1.00	7.38	2.0
Approach		632	1.3	2.130	1050.3	LOS F	219.4	1553.2	1.00	8.72	2.0
East: Antill Street (W)											
4	L	93	0.0	0.108	10.2	LOS B	0.4	2.7	0.43	0.70	47.0
5	T	1006	6.1	0.283	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1099	5.6	0.283	0.9	NA	0.4	2.7	0.04	0.06	58.6
West: Antill Street (W)											
11	T	705	0.0	0.381	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	672	3.1	1.335	326.8	LOS F	115.0	826.8	1.00	6.46	6.0
Approach		1377	1.5	1.335	159.4	NA	115.0	826.8	0.49	3.15	11.2
South West: Median (RT Stage 2)											
32	R	69	12.1	0.129	13.5	LOS B	0.5	3.1	0.60	0.86	28.0
Approach		69	12.1	0.129	13.5	LOS B	0.5	3.1	0.60	0.86	28.0
All Vehicles		3177	3.1	2.130	278.5	NA	219.4	1553.2	0.44	3.14	6.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:45:04 PM
SIDRA INTERSECTION 5.1.12.2089

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_AM_MasterPlan2031.sip
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MOVEMENT SUMMARY

Site: 5 AM

Antill Street - Dickson Shops Access Road
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	162	0.0	0.369	16.8	LOS C	1.7	11.8	0.73	0.96	41.2
Approach		162	0.0	0.369	16.8	LOS C	1.7	11.8	0.73	0.96	41.2
East: Antill Street (W)											
4	L	1	0.0	0.265	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	941	6.5	0.265	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		942	6.5	0.265	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		1104	5.5	0.369	2.5	NA	1.7	11.8	0.11	0.14	56.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:45:04 PM
SIDRA INTERSECTION 5.1.12.2089

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_AM_MasterPlan2031.sip
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MOVEMENT SUMMARY

Site: 6 AM

Antill Street - Cowper Street
Master Plan 2031 AM
Signals - Fixed Time   Cycle Time = 70 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	366	0.0	0.381	17.6	LOS B	7.0	50.5	0.60	0.80	40.5
3	R	405	5.2	1.000 [3]	34.2	LOS C	13.4	97.9	1.00	0.86	31.1
Approach		771	4.1	1.000	26.3	LOS C	13.4	97.9	0.81	0.83	34.9
East: Antill Street (E)											
4	L	499	1.3	1.000 [3]	38.3	LOS D	18.2	128.9	1.00	0.89	29.2
5	T	929	7.8	0.973	60.4	LOS E	24.9	185.9	1.00	1.34	21.6
Approach		1427	4.9	1.000	52.6	LOS D	24.9	185.9	1.00	1.18	23.8
West: Antill Street (W)											
11	T	562	1.5	0.565	24.3	LOS C	8.5	60.2	0.91	0.77	34.2
12	R	219	0.0	0.669	38.8	LOS D	7.5	52.2	0.98	0.85	29.1
Approach		781	1.1	0.669	28.3	LOS C	8.5	60.2	0.93	0.79	32.6
All Vehicles		2979	3.7	1.000	39.5	LOS D	24.9	185.9	0.93	0.99	28.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	29.3	LOS C	0.1	0.1	0.91	0.91
P3	Across E approach	107	29.3	LOS C	0.2	0.2	0.91	0.91
P4	Across E approach	33	26.6	LOS C	0.1	0.1	0.87	0.87
All Pedestrians		212	28.8	LOS C			0.91	0.91

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Processed: Monday, 18 June 2012 1:45:05 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 7 AM

Antill Street - Rosevear Place
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	74	0.0	0.443	35.8	LOS E	1.6	11.0	0.92	1.04	30.2
3	R	1	0.0	0.443	35.4	LOS E	1.6	11.0	0.92	1.03	30.3
Approach		75	0.0	0.443	35.8	LOS E	1.6	11.0	0.92	1.04	30.2
East: Antill Street (E)											
4	L	51	0.0	0.381	8.2	LOS A	0.0	0.0	0.00	1.04	49.0
5	T	1320	4.1	0.381	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1371	4.0	0.381	0.3	NA	0.0	0.0	0.00	0.04	59.5
West: Antill Street											
11	T	882	3.1	0.394	4.6	LOS A	3.5	25.2	0.19	0.00	52.1
12	R	72	0.0	0.394	32.5	LOS D	3.5	25.2	1.00	1.06	33.1
Approach		954	2.9	0.394	6.7	NA	3.5	25.2	0.25	0.08	49.9
South West: Median (RT Stage 2)											
32	R	1	0.0	0.005	21.3	LOS C	0.0	0.1	0.75	0.78	20.9
Approach		1	0.0	0.005	21.3	LOS C	0.0	0.1	0.75	0.78	20.9
All Vehicles		2400	3.4	0.443	4.0	NA	3.5	25.2	0.13	0.09	53.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:45:05 PM
SIDRA INTERSECTION 5.1.12.2089

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_AM_MasterPlan2031.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 8 AM

Badham Street - Dickson Shop Access Road
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	280	0.0	0.448	9.5	LOS A	5.1	35.4	1.00	0.00	42.5
3	R	168	0.0	0.448	17.9	LOS C	5.1	35.4	1.00	1.12	42.3
Approach		448	0.0	0.448	12.7	NA	5.1	35.4	1.00	0.42	42.4
East: Dickson Shop Access Road (E)											
4	L	316	0.0	3.790	2555.6	LOS F	304.2	2129.6	1.00	8.35	0.8
6	R	316	0.0	3.790	2555.8	LOS F	304.2	2129.6	1.00	6.97	0.8
Approach		632	0.0	3.790	2555.7	LOS F	304.2	2129.6	1.00	7.66	0.8
North: Badham Street (N)											
7	L	122	0.0	0.408	8.2	LOS A	0.0	0.0	0.00	0.98	49.0
8	T	613	3.4	0.408	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		735	2.9	0.408	1.4	NA	0.0	0.0	0.00	0.16	57.8
All Vehicles		1815	1.2	3.790	893.1	NA	304.2	2129.6	0.60	2.84	2.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 9 AM

Cowper Street - Dickson Shop Access Road
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	101	0.0	0.377	8.2	LOS A	0.0	0.0	0.00	0.99	49.0
2	T	566	6.7	0.377	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		667	5.7	0.377	1.2	NA	0.0	0.0	0.00	0.15	58.0
North: Cowper Street (N)											
8	T	731	1.2	0.588	11.4	LOS B	10.8	76.3	1.00	0.00	41.8
9	R	133	0.0	0.588	19.8	LOS C	10.8	76.3	1.00	1.18	41.7
Approach		863	1.0	0.588	12.7	NA	10.8	76.3	1.00	0.18	41.8
West: Dickson Shop Access Road (W)											
10	L	221	0.0	0.939	71.8	LOS F	13.2	92.2	0.88	2.00	20.2
12	R	42	0.0	0.939	72.3	LOS F	13.2	92.2	0.88	1.72	20.1
Approach		263	0.0	0.939	71.8	LOS F	13.2	92.2	0.88	1.96	20.2
All Vehicles		1794	2.6	0.939	17.1	NA	13.2	92.2	0.61	0.43	39.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 10 AM

Badham Street - Woolley Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	38	0.0	0.229	8.2	LOS A	0.0	0.0	0.00	1.03	49.0
2	T	383	0.0	0.229	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		421	0.0	0.229	0.7	NA	0.0	0.0	0.00	0.09	58.8
North: Badham Street (N)											
8	T	855	2.5	0.552	6.0	LOS A	10.8	76.8	0.91	0.00	45.7
9	R	76	0.0	0.552	14.4	LOS B	10.8	76.8	0.91	1.13	46.6
Approach		931	2.3	0.552	6.7	NA	10.8	76.8	0.91	0.09	45.7
West: Woolley Street											
10	L	82	0.0	0.868	96.6	LOS F	6.6	46.4	0.87	1.63	16.4
12	R	42	0.0	0.868	96.9	LOS F	6.6	46.4	0.87	1.38	16.3
Approach		124	0.0	0.868	96.7	LOS F	6.6	46.4	0.87	1.55	16.3
All Vehicles		1476	1.4	0.868	12.5	NA	10.8	76.8	0.65	0.21	42.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 11 AM

Badham Street - Dickson Place
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	1	0.0	0.002	1.6	LOS A	0.0	0.1	0.41	0.00	51.4
3	R	1	0.0	0.002	10.1	LOS B	0.0	0.1	0.41	0.73	47.9
Approach		2	0.0	0.002	5.8	NA	0.0	0.1	0.41	0.36	49.6
East: Dickson Place											
4	L	1	0.0	0.204	10.4	LOS B	0.9	6.1	0.41	0.65	46.4
6	R	137	0.0	0.204	10.7	LOS B	0.9	6.1	0.41	0.72	46.3
Approach		138	0.0	0.204	10.7	LOS B	0.9	6.1	0.41	0.72	46.3
North: Badham Street (N)											
7	L	383	5.5	0.227	8.4	LOS A	0.0	0.0	0.00	0.67	49.0
8	T	1	0.0	0.227	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		384	5.5	0.227	8.4	NA	0.0	0.0	0.00	0.67	49.0
All Vehicles		524	4.0	0.227	9.0	NA	0.9	6.1	0.11	0.68	48.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:45:06 PM
SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 12 AM

Cowper Street - Dickson Place
Master Plan 2031 AM
Signals - Fixed Time   Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	251	0.0	1.144	214.3	LOS F	86.9	643.6	1.00	1.66	8.8
2	T	408	10.8	1.144	206.2	LOS F	86.9	643.6	1.00	1.66	8.8
Approach		659	6.7	1.144	209.3	LOS F	86.9	643.6	1.00	1.66	8.8
North: Cowper Street (N)											
8	T	735	2.6	0.984	82.6	LOS F	65.0	475.1	1.00	1.19	17.6
9	R	131	13.2	1.000 [3]	50.4	LOS D	5.7	44.5	1.00	0.80	25.2
Approach		865	6.3	1.000	77.8	LOS E	65.0	475.1	1.00	1.13	18.5
West: Dickson Place (W)											
10	L	328	14.7	1.138	206.9	LOS F	103.2	760.8	1.00	1.35	9.0
12	R	455	0.0	1.138	206.4	LOS F	103.2	760.8	1.00	1.35	8.9
Approach		783	6.2	1.138	206.6	LOS F	103.2	760.8	1.00	1.35	9.0
All Vehicles		2307	6.4	1.144	159.1	LOS F	103.2	760.8	1.00	1.36	11.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	72	12.5	LOS B	0.1	0.1	0.44	0.44
P2	Across S approach	72	59.1	LOS E	0.3	0.3	0.95	0.95
P7	Across W approach	16	15.3	LOS B	0.0	0.0	0.48	0.48
P8	Across W approach	38	59.1	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		198	38.6	LOS D			0.73	0.73

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 13 AM

Challis Street - Cape Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	40	0.0	0.651	13.2	LOS B	13.8	97.9	0.89	0.10	46.3
2	T	701	2.4	0.651	5.0	LOS A	13.8	97.9	0.89	0.00	44.9
3	R	267	0.0	0.651	13.4	LOS B	13.8	97.9	0.89	0.99	46.4
Approach		1008	1.7	0.651	7.5	NA	13.8	97.9	0.89	0.27	45.4
East: Cape Street											
4	L	269	0.0	10.183	8329.8	LOS F	607.5	4387.9	1.00	9.96	0.3
5	T	699	0.0	10.183	8328.5	LOS F	607.5	4387.9	1.00	5.61	0.3
6	R	51	75.0	10.183	8333.1	LOS F	607.5	4387.9	1.00	5.13	0.3
Approach		1019	3.7	10.183	8329.1	LOS F	607.5	4387.9	1.00	6.74	0.3
North: Challis Street											
7	L	42	100.0	0.444	30.3	LOS D	5.6	47.2	1.00	0.00	36.8
8	T	194	1.1	0.444	18.4	LOS C	5.6	47.2	1.00	0.00	36.1
9	R	99	31.9	0.444	28.1	LOS D	5.6	47.2	1.00	1.15	35.9
Approach		335	22.6	0.444	22.8	NA	5.6	47.2	1.00	0.34	36.2
West: Cape Street											
10	L	55	0.0	4.488	3202.2	LOS F	164.4	1150.6	1.00	5.80	0.7
11	T	1	0.0	4.488	3201.0	LOS F	164.4	1150.6	1.00	4.94	0.7
12	R	261	0.0	4.488	3202.5	LOS F	164.4	1150.6	1.00	4.45	0.7
Approach		317	0.0	4.488	3202.4	LOS F	164.4	1150.6	1.00	4.69	0.7
All Vehicles		2679	4.9	10.183	3552.4	NA	607.5	4387.9	0.96	3.26	0.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 14 AM

Cape Street - Woolley Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	939	4.0	0.522	4.1	LOS A	9.0	65.1	0.76	0.00	47.9
6	R	1	0.0	0.522	12.5	LOS B	9.0	65.1	0.76	1.05	48.2
Approach		940	4.0	0.522	4.1	NA	9.0	65.1	0.76	0.00	47.9
North: Woolley Street											
7	L	1	0.0	1.052	218.7	LOS F	8.6	60.4	1.00	1.85	8.5
9	R	76	0.0	1.052	218.9	LOS F	8.6	60.4	1.00	1.57	8.5
Approach		77	0.0	1.052	218.9	LOS F	8.6	60.4	1.00	1.58	8.5
West: Cape Street (W)											
10	L	48	0.0	0.182	8.2	LOS A	0.0	0.0	0.00	0.99	49.0
11	T	259	16.3	0.182	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		307	13.7	0.182	1.3	NA	0.0	0.0	0.00	0.16	57.9
All Vehicles		1324	6.0	1.052	15.9	NA	9.0	65.1	0.60	0.13	39.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 15 AM

Cowper Street - Davenport Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	564	7.8	0.527	21.1	LOS C	10.3	76.8	1.00	0.00	35.4
3	R	84	2.5	0.527	29.6	LOS D	10.3	76.8	1.00	1.22	35.2
Approach		648	7.1	0.527	22.2	NA	10.3	76.8	1.00	0.16	35.4
East: Davenport Street (E)											
4	L	17	0.0	1.696	728.5	LOS F	35.4	247.5	1.00	3.12	2.8
6	R	99	0.0	1.696	728.7	LOS F	35.4	247.5	1.00	2.68	2.8
Approach		116	0.0	1.696	728.7	LOS F	35.4	247.5	1.00	2.75	2.8
North: Cowper Street											
7	L	152	0.0	0.559	8.2	LOS A	0.0	0.0	0.00	0.99	49.0
8	T	865	1.7	0.559	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1017	1.4	0.559	1.2	NA	0.0	0.0	0.00	0.15	58.1
All Vehicles		1781	3.4	1.696	56.1	NA	35.4	247.5	0.43	0.32	23.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 16 AM

Northbourne Avenue - Morphett Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	1330	13.7	0.272	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	101	3.0	1.690	736.8	LOS F	31.1	223.0	1.00	2.52	2.9
Approach		1432	9.4	1.690	52.2	NA	31.1	223.0	0.07	0.18	19.2
East: Morphett Street (E)											
4	L	162	3.9	2.702	1617.8	LOS F	70.9	513.0	1.00	3.38	1.3
Approach		162	3.9	2.702	1617.8	LOS F	70.9	513.0	1.00	3.38	1.3
North: Northbourne Avenue (N)											
7	L	99	2.1	0.576	8.3	LOS A	0.0	0.0	0.00	1.03	49.0
8	T	2966	6.5	0.576	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		3065	6.3	0.576	0.3	NA	0.0	0.0	0.00	0.03	59.6
All Vehicles		4659	7.2	2.702	72.5	NA	70.9	513.0	0.06	0.19	18.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 17 AM

Morphett Street - Challis Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	141	4.5	0.780	12.8	LOS B	9.0	63.5	1.00	0.00	38.7
6	R	444	0.0	0.780	21.1	LOS C	9.0	63.5	1.00	1.39	38.5
Approach		585	1.1	0.780	19.1	NA	9.0	63.5	1.00	1.06	38.6
North: Challis Street											
7	L	764	0.3	1.075	98.4	LOS F	57.0	399.6	1.00	3.50	16.2
9	R	21	0.0	0.163	36.4	LOS E	0.5	3.6	0.88	0.97	29.8
Approach		785	0.3	1.075	96.7	LOS F	57.0	399.6	1.00	3.43	16.4
West: Morphett Street (W)											
10	L	461	3.7	0.383	8.3	LOS A	0.0	0.0	0.00	0.76	49.0
11	T	211	1.0	0.383	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		672	2.8	0.383	5.7	NA	0.0	0.0	0.00	0.52	52.0
All Vehicles		2042	1.3	1.075	44.6	NA	57.0	399.6	0.67	1.79	26.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 18 AM

Cowper Street - Morphett Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	234	0.0	0.422	8.2	LOS A	0.0	0.0	0.00	0.90	49.0
2	T	503	10.0	0.422	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		737	6.9	0.422	2.6	NA	0.0	0.0	0.00	0.29	56.0
North: Cowper Street (N)											
8	T	541	1.6	0.830	24.5	LOS C	14.8	105.0	1.00	0.00	32.9
9	R	322	2.0	0.830	33.0	LOS D	14.8	105.0	1.00	1.51	32.7
Approach		863	1.7	0.830	27.7	NA	14.8	105.0	1.00	0.56	32.8
West: Morphett Street											
10	L	160	1.3	5.233	3884.3	LOS F	247.4	1766.0	1.00	6.33	0.6
12	R	297	2.8	5.233	3884.7	LOS F	247.4	1766.0	1.00	4.82	0.6
Approach		457	2.3	5.233	3884.6	LOS F	247.4	1766.0	1.00	5.35	0.6
All Vehicles		2057	3.7	5.233	875.3	NA	247.4	1766.0	0.64	1.53	2.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:45:08 PM
SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 19 AM

Northborne Avenue - Cape Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street											
4	L	840	3.8	1.974	900.2	LOS F	270.0	1951.0	1.00	10.03	2.3
Approach		840	3.8	1.974	900.2	LOS F	270.0	1951.0	1.00	10.03	2.3
North: Northbourn Avenue											
7	L	314	0.0	0.178	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
8	T	724	14.1	0.427	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1038	9.8	0.427	2.5	NA	0.0	0.0	0.00	0.20	56.2
All Vehicles		1878	7.1	1.974	404.0	NA	270.0	1951.0	0.45	4.60	4.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 20 AM

Cape Street - Badham Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street											
5	T	497	7.6	0.375	8.3	LOS A	7.4	55.1	0.91	0.00	45.1
6	R	46	0.0	0.375	16.8	LOS C	7.4	55.1	0.91	1.07	44.3
Approach		543	7.0	0.375	9.1	NA	7.4	55.1	0.91	0.09	45.1
North: Badham Street											
7	L	196	0.0	0.938	33.9	LOS D	21.8	152.5	0.77	1.73	30.9
9	R	484	0.0	0.938	34.1	LOS D	21.8	152.5	0.77	1.78	30.9
Approach		680	0.0	0.938	34.1	LOS D	21.8	152.5	0.77	1.77	30.9
West: Cape Street											
10	L	91	0.0	0.157	8.2	LOS A	0.0	0.0	0.00	0.89	49.0
11	T	168	25.0	0.157	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		259	16.3	0.157	2.9	NA	0.0	0.0	0.00	0.31	55.6
All Vehicles		1482	5.4	0.938	19.5	NA	21.8	152.5	0.68	0.90	38.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 21 AM

Dickson Place - Cape Street
Master Plan 2031 AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cape Street											
1	L	1	0.0	2.866	1713.0	LOS F	287.7	2148.5	1.00	10.14	1.2
3	R	674	7.8	2.866	1713.6	LOS F	287.7	2148.5	1.00	8.19	1.2
Approach		675	7.8	2.866	1713.6	LOS F	287.7	2148.5	1.00	8.19	1.2
East: Dickson Place											
4	L	421	9.5	0.329	8.5	LOS A	0.0	0.0	0.00	0.74	49.0
5	T	137	0.0	0.329	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		558	7.2	0.329	6.4	NA	0.0	0.0	0.00	0.56	51.3
West: Dickson Place											
11	T	133	0.0	0.835	31.8	LOS D	11.5	84.5	1.00	0.00	29.1
12	R	251	8.4	0.835	40.6	LOS E	11.5	84.5	1.00	1.53	28.9
Approach		383	5.5	0.835	37.5	NA	11.5	84.5	1.00	1.00	29.0
All Vehicles		1616	7.0	2.866	726.7	NA	287.7	2148.5	0.65	3.85	2.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 1 PM

1- Northbourne Avenue - Antill Street - Mouat Street
Master Plan 2031 PM
Signals - Fixed Time   Cycle Time = 125 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	509	4.1	0.643	17.0	LOS B	13.7	99.1	0.56	0.76	41.1
2	T	1826	4.6	1.370	343.8	LOS F	140.5	1022.0	0.98	2.28	5.7
3	R	130	7.4	1.211	276.7	LOS F	18.4	137.1	1.00	1.49	7.1
Approach		2465	4.7	1.370	272.7	LOS F	140.5	1022.0	0.89	1.92	7.0
East: Antill Street											
4	L	333	0.0	0.567	18.4	LOS B	9.2	64.7	0.56	0.75	40.0
5	T	855	4.7	1.366	243.8	LOS F	108.6	792.4	1.00	1.80	7.7
6	R	486	5.6	1.366	158.9	LOS F	108.6	792.4	1.00	1.33	11.4
Approach		1674	4.0	1.366	174.3	LOS F	108.6	792.4	0.91	1.45	10.4
North: Northbourne Avenue (N)											
7	L	225	7.5	0.234	13.3	LOS B	4.3	32.1	0.38	0.69	44.2
8	T	890	5.1	0.532	38.2	LOS D	14.9	109.1	0.88	0.75	28.0
9	R	125	0.0	1.106	186.1	LOS F	14.0	97.9	1.00	1.30	10.0
Approach		1240	4.8	1.106	48.5	LOS D	14.9	109.1	0.80	0.80	25.1
West: Mouat Street (W)											
10	L	236	0.9	1.203	227.8	LOS F	54.3	390.3	1.00	1.44	8.4
11	T	507	5.8	1.203	245.5	LOS F	54.3	390.3	1.00	1.66	7.6
12	R	282	1.5	1.065	123.7	LOS F	25.3	179.5	1.00	1.21	14.0
Approach		1025	3.5	1.203	207.9	LOS F	54.3	390.3	1.00	1.48	8.9
All Vehicles		6404	4.3	1.370	193.2	LOS F	140.5	1022.0	0.90	1.51	9.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	45	23.7	LOS C	0.1	0.1	0.62	0.62
P2	Across S approach	45	40.8	LOS E	0.1	0.1	0.81	0.81
P3	Across E approach	39	40.0	LOS D	0.1	0.1	0.80	0.80
P5	Across N approach	35	23.7	LOS C	0.1	0.1	0.62	0.62
P6	Across N approach	35	51.1	LOS E	0.1	0.1	0.90	0.90
P7	Across W approach	5	40.0	LOS D	0.0	0.0	0.80	0.80
All Pedestrians		204	35.7	LOS D			0.75	0.75

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 2 PM

Northbourne Avenue Service Road - Antill Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	23	0.0	0.049	13.8	LOS B	0.2	1.2	0.62	0.84	43.4
Approach		23	0.0	0.049	13.8	LOS B	0.2	1.2	0.62	0.84	43.4
West: Antill Street (W)											
10	L	25	33.3	0.266	10.2	LOS B	0.0	0.0	0.00	1.19	48.1
11	T	918	5.7	0.266	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		943	6.5	0.266	0.3	NA	0.0	0.0	0.00	0.03	59.6
All Vehicles		966	6.3	0.266	0.6	NA	0.2	1.2	0.01	0.05	59.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 3 PM

Antill Street - Challis Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	280	24.8	2.031	979.7	LOS F	96.5	819.2	1.00	5.09	2.2
Approach		280	24.8	2.031	979.7	LOS F	96.5	819.2	1.00	5.09	2.2
East: Antil Street (W)											
4	L	21	80.0	0.058	11.5	LOS B	0.1	1.5	0.27	0.58	48.0
5	T	1413	0.0	0.382	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1434	1.2	0.382	0.2	NA	0.1	1.5	0.00	0.01	59.8
West: Antill Street											
11	T	857	1.2	0.233	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	86	48.8	1.068	208.2	LOS F	8.8	87.4	1.00	1.70	9.0
Approach		943	5.6	1.068	19.1	NA	8.8	87.4	0.09	0.16	39.5
All Vehicles		2657	5.2	2.031	110.1	NA	96.5	819.2	0.14	0.60	14.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 4 PM

Antill Street - Badham Street
Master Plan 2031 PM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	653	0.0	1.752	705.0	LOS F	206.3	1458.1	1.00	8.93	2.9
3	R	76	11.1	1.752	705.2	LOS F	206.3	1458.1	1.00	7.51	2.9
Approach		728	1.2	1.752	705.0	LOS F	206.3	1458.1	1.00	8.78	2.9
East: Antill Street (W)											
4	L	76	0.0	0.083	9.8	LOS A	0.3	2.1	0.41	0.67	47.4
5	T	861	2.0	0.236	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		937	1.8	0.236	0.8	NA	0.3	2.1	0.03	0.05	58.7
West: Antill Street (W)											
11	T	537	1.6	0.293	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	455	0.5	0.741	19.9	LOS C	6.0	42.2	0.84	1.24	38.8
Approach		992	1.1	0.741	9.1	NA	6.0	42.2	0.38	0.57	48.0
South West: Median (RT Stage 2)											
32	R	76	11.1	0.108	11.5	LOS B	0.4	2.7	0.52	0.78	30.5
Approach		76	11.1	0.108	11.5	LOS B	0.4	2.7	0.52	0.78	30.5
All Vehicles		2733	1.6	1.752	191.8	NA	206.3	1458.1	0.43	2.59	9.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 5 PM

Antill Street - Dickson Shops Access Road
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	200	0.0	0.347	13.6	LOS B	1.7	11.7	0.63	0.90	43.8
Approach		200	0.0	0.347	13.6	LOS B	1.7	11.7	0.63	0.90	43.8
East: Antill Street (W)											
4	L	1	0.0	0.202	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	737	2.3	0.202	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		738	2.3	0.202	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		938	1.8	0.347	2.9	NA	1.7	11.7	0.13	0.19	55.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 6 PM

Antill Street - Cowper Street
Master Plan 2031 PM
Signals - Fixed Time   Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	322	0.0	0.549	26.3	LOS C	7.9	55.5	0.87	0.83	34.9
3	R	493	1.1	1.000 [3]	28.6	LOS C	13.9	97.9	0.99	0.87	33.7
Approach		815	0.8	1.000	27.7	LOS C	13.9	97.9	0.94	0.85	34.1
East: Antill Street (E)											
4	L	192	1.1	0.329	24.7	LOS C	4.3	30.4	0.79	0.79	35.7
5	T	493	3.4	0.907	39.7	LOS D	9.2	66.5	1.00	1.12	27.4
Approach		684	2.8	0.907	35.5	LOS D	9.2	66.5	0.94	1.03	29.3
West: Antill Street (W)											
11	T	448	2.8	0.823	32.8	LOS C	7.5	53.6	1.00	0.98	30.0
12	R	141	3.0	0.377	30.7	LOS C	3.7	26.4	0.90	0.79	32.6
Approach		589	2.9	0.823	32.3	LOS C	7.5	53.6	0.98	0.94	30.6
All Vehicles		2088	2.0	1.000	31.6	LOS C	13.9	97.9	0.95	0.93	31.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	5	16.9	LOS B	0.0	0.0	0.75	0.75
P3	Across E approach	13	24.3	LOS C	0.0	0.0	0.90	0.90
P4	Across E approach	13	21.7	LOS C	0.0	0.0	0.85	0.85
All Pedestrians		31	22.0	LOS C			0.85	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 7 PM

Antill Street - Rosevear Place
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	78	0.0	0.278	15.4	LOS C	1.2	8.1	0.64	0.91	42.1
3	R	48	0.0	0.278	15.0	LOS C	1.2	8.1	0.64	0.90	42.3
Approach		126	0.0	0.278	15.3	LOS C	1.2	8.1	0.64	0.91	42.2
East: Antill Street (E)											
4	L	25	0.0	0.163	8.2	LOS A	0.0	0.0	0.00	1.03	49.0
5	T	566	3.0	0.163	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		592	2.8	0.163	0.3	NA	0.0	0.0	0.00	0.04	59.4
West: Antill Street											
11	T	678	2.5	0.241	1.4	LOS A	1.7	12.3	0.21	0.00	55.6
12	R	84	0.0	0.241	12.1	LOS B	1.7	12.3	0.61	0.95	46.8
Approach		762	2.2	0.241	2.6	NA	1.7	12.3	0.26	0.10	54.5
South West: Median (RT Stage 2)											
32	R	48	0.0	0.145	17.1	LOS C	0.5	3.2	0.67	0.89	24.0
Approach		48	0.0	0.145	17.1	LOS C	0.5	3.2	0.67	0.89	24.0
All Vehicles		1528	2.2	0.278	3.2	NA	1.7	12.3	0.20	0.17	54.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 8 PM

Badham Street - Dickson Shop Access Road
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	488	0.0	0.616	8.7	LOS A	9.9	69.1	1.00	0.00	43.2
3	R	278	0.0	0.616	17.1	LOS C	9.9	69.1	1.00	1.21	43.1
Approach		766	0.0	0.616	11.7	NA	9.9	69.1	1.00	0.44	43.1
East: Dickson Shop Access Road (E)											
4	L	120	0.0	1.853	838.7	LOS F	78.9	552.5	1.00	5.60	2.5
6	R	126	0.0	1.853	839.0	LOS F	78.9	552.5	1.00	4.09	2.5
Approach		246	0.0	1.853	838.9	LOS F	78.9	552.5	1.00	4.83	2.5
North: Badham Street (N)											
7	L	133	0.0	0.290	8.2	LOS A	0.0	0.0	0.00	0.93	49.0
8	T	396	0.5	0.290	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		528	0.4	0.290	2.1	NA	0.0	0.0	0.00	0.23	56.8
All Vehicles		1541	0.1	1.853	140.6	NA	78.9	552.5	0.66	1.07	12.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 9 PM

Cowper Street - Dickson Shop Access Road
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	135	0.0	0.404	8.2	LOS A	0.0	0.0	0.00	0.97	49.0
2	T	602	1.0	0.404	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		737	0.9	0.404	1.5	NA	0.0	0.0	0.00	0.18	57.6
North: Cowper Street (N)											
8	T	246	2.6	0.228	6.1	LOS A	2.0	14.3	0.72	0.00	47.6
9	R	59	0.0	0.228	14.5	LOS B	2.0	14.3	0.72	1.02	45.2
Approach		305	2.1	0.228	7.7	NA	2.0	14.3	0.72	0.20	47.1
West: Dickson Shop Access Road (W)											
10	L	213	0.0	0.565	20.2	LOS C	3.6	24.9	0.76	1.08	38.6
12	R	38	0.0	0.565	20.8	LOS C	3.6	24.9	0.76	1.09	38.5
Approach		251	0.0	0.565	20.3	LOS C	3.6	24.9	0.76	1.09	38.5
All Vehicles		1293	1.0	0.565	6.6	NA	3.6	24.9	0.32	0.36	50.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 10 PM

Badham Street - Woolley Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	143	0.0	0.381	8.2	LOS A	0.0	0.0	0.00	0.96	49.0
2	T	554	0.0	0.381	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		697	0.0	0.381	1.7	NA	0.0	0.0	0.00	0.20	57.3
North: Badham Street (N)											
8	T	335	0.6	0.580	11.0	LOS B	7.0	49.1	1.00	0.00	41.1
9	R	242	0.0	0.580	19.4	LOS C	7.0	49.1	1.00	1.19	40.9
Approach		577	0.4	0.580	14.5	NA	7.0	49.1	1.00	0.50	41.0
West: Woolley Street											
10	L	215	0.0	1.263	295.0	LOS F	45.9	321.1	1.00	4.08	6.6
12	R	69	0.0	1.263	295.3	LOS F	45.9	321.1	1.00	3.38	6.5
Approach		284	0.0	1.263	295.1	LOS F	45.9	321.1	1.00	3.91	6.6
All Vehicles		1558	0.1	1.263	60.0	NA	45.9	321.1	0.55	0.99	22.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 11 PM

Badham Street - Dickson Place
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	1	0.0	0.001	0.7	LOS A	0.0	0.0	0.29	0.00	53.8
3	R	1	0.0	0.001	9.1	LOS A	0.0	0.0	0.29	0.74	48.2
Approach		2	0.0	0.001	4.9	NA	0.0	0.0	0.29	0.37	50.9
East: Dickson Place											
4	L	1	0.0	0.373	9.5	LOS A	2.0	13.9	0.35	0.61	47.2
6	R	291	0.0	0.373	9.8	LOS A	2.0	13.9	0.35	0.67	47.2
Approach		292	0.0	0.373	9.8	LOS A	2.0	13.9	0.35	0.67	47.2
North: Badham Street (N)											
7	L	192	0.0	0.109	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
8	T	1	0.0	0.109	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		193	0.0	0.109	8.1	NA	0.0	0.0	0.00	0.66	49.0
All Vehicles		486	0.0	0.373	9.1	NA	2.0	13.9	0.21	0.67	47.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 12 PM

Cowper Street - Dickson Place
Master Plan 2031 PM
Signals - Fixed Time   Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	333	0.0	0.944	61.8	LOS E	69.2	490.4	1.00	1.06	22.8
2	T	583	2.2	0.944	53.6	LOS D	69.2	490.4	1.00	1.06	22.9
Approach		916	1.4	0.944	56.6	LOS E	69.2	490.4	1.00	1.06	22.9
North: Cowper Street (N)											
8	T	223	4.7	0.197	10.6	LOS B	5.8	42.4	0.45	0.38	44.9
9	R	84	40.0	0.733	48.6	LOS D	3.7	35.2	1.00	0.85	26.1
Approach		307	14.4	0.733	21.0	LOS C	5.8	42.4	0.60	0.51	37.5
West: Dickson Place (W)											
10	L	116	36.4	0.940	89.9	LOS F	23.8	186.7	1.00	1.02	17.4
12	R	185	0.0	0.940	88.6	LOS F	23.8	186.7	1.00	1.02	17.4
Approach		301	14.0	0.940	89.1	LOS F	23.8	186.7	1.00	1.02	17.4
All Vehicles		1524	6.5	0.944	55.8	LOS E	69.2	490.4	0.92	0.95	23.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	160	59.1	LOS E	0.6	0.6	0.95	0.95
P2	Across S approach	160	59.1	LOS E	0.6	0.6	0.95	0.95
P7	Across W approach	40	59.1	LOS E	0.1	0.1	0.95	0.95
P8	Across W approach	40	59.1	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		400	59.1	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 13 PM

Challis Street - Cape Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	1	0.0	0.666	10.4	LOS B	9.6	69.6	0.53	0.34	47.0
2	T	238	17.7	0.666	2.2	LOS A	9.6	69.6	0.53	0.00	48.8
3	R	667	0.0	0.666	10.6	LOS B	9.6	69.6	0.53	0.72	46.9
Approach		906	4.6	0.666	8.4	NA	9.6	69.6	0.53	0.53	47.4
East: Cape Street											
4	L	137	0.0	1.185	290.6	LOS F	35.5	284.4	1.00	2.18	6.7
5	T	1	0.0	1.185	289.3	LOS F	35.5	284.4	1.00	2.07	6.7
6	R	63	53.3	1.185	293.0	LOS F	35.5	284.4	1.00	1.97	6.6
Approach		201	16.8	1.185	291.3	LOS F	35.5	284.4	1.00	2.12	6.6
North: Challis Street											
7	L	42	100.0	0.201	13.5	LOS B	1.0	8.6	0.46	0.39	44.8
8	T	46	0.0	0.201	1.6	LOS A	1.0	8.6	0.46	0.00	50.0
9	R	135	12.5	0.201	10.6	LOS B	1.0	8.6	0.46	0.76	47.4
Approach		223	26.4	0.201	9.3	NA	1.0	8.6	0.46	0.53	47.3
West: Cape Street											
10	L	2	0.0	0.576	63.1	LOS F	2.2	15.7	0.94	1.00	21.8
11	T	1	0.0	0.576	61.8	LOS F	2.2	15.7	0.94	1.08	21.9
12	R	57	0.0	0.576	63.3	LOS F	2.2	15.7	0.94	1.08	21.8
Approach		60	0.0	0.576	63.3	LOS F	2.2	15.7	0.94	1.08	21.8
All Vehicles		1391	9.7	1.185	51.8	NA	35.5	284.4	0.60	0.79	24.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 14 PM

Cape Street - Woolley Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	316	10.7	0.184	5.9	LOS A	2.2	16.8	0.73	0.00	48.2
6	R	1	0.0	0.184	14.4	LOS B	2.2	16.8	0.73	1.06	46.2
Approach		317	10.6	0.184	5.9	NA	2.2	16.8	0.73	0.00	48.2
North: Woolley Street											
7	L	1	0.0	0.953	93.9	LOS F	9.3	66.3	0.99	1.82	16.7
9	R	160	2.6	0.953	94.3	LOS F	9.3	66.3	0.99	1.67	16.6
Approach		161	2.6	0.953	94.3	LOS F	9.3	66.3	0.99	1.67	16.6
West: Cape Street (W)											
10	L	284	0.0	0.406	8.2	LOS A	0.0	0.0	0.00	0.86	49.0
11	T	425	9.9	0.406	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		709	5.9	0.406	3.3	NA	0.0	0.0	0.00	0.35	55.0
All Vehicles		1187	6.7	0.953	16.3	NA	9.3	66.3	0.33	0.43	40.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 15 PM

Cowper Street - Davenport Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	779	1.6	0.440	4.0	LOS A	7.0	49.8	0.75	0.00	47.9
3	R	15	0.0	0.440	12.4	LOS B	7.0	49.8	0.75	0.98	48.2
Approach		794	1.6	0.440	4.1	NA	7.0	49.8	0.75	0.02	47.9
East: Davenport Street (E)											
4	L	15	0.0	1.219	291.0	LOS F	23.2	162.5	1.00	3.00	6.6
6	R	131	0.0	1.219	291.2	LOS F	23.2	162.5	1.00	2.37	6.6
Approach		145	0.0	1.219	291.2	LOS F	23.2	162.5	1.00	2.44	6.6
North: Cowper Street											
7	L	84	0.0	0.227	8.2	LOS A	0.0	0.0	0.00	0.96	49.0
8	T	324	3.2	0.227	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		408	2.6	0.227	1.7	NA	0.0	0.0	0.00	0.20	57.3
All Vehicles		1347	1.7	1.219	34.3	NA	23.2	162.5	0.55	0.33	29.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 16 PM

Northbourne Avenue - Morphett Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	2665	3.8	0.496	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	260	6.0	1.160	203.8	LOS F	30.4	223.7	1.00	3.00	9.3
Approach		2924	4.2	1.160	18.1	NA	30.4	223.7	0.09	0.27	40.1
East: Morphett Street (E)											
4	L	57	0.0	0.344	33.6	LOS D	1.2	8.2	0.91	1.00	31.4
Approach		57	0.0	0.344	33.6	LOS D	1.2	8.2	0.91	1.00	31.4
North: Northbourne Avenue (N)											
7	L	36	0.0	0.309	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
8	T	1634	3.9	0.309	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1669	3.8	0.309	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		4651	4.0	1.160	11.9	NA	30.4	223.7	0.07	0.19	45.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 17 PM

Morphett Street - Challis Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	42	0.0	0.407	5.5	LOS A	2.4	17.3	0.67	0.00	46.2
6	R	272	2.3	0.407	13.9	LOS B	2.4	17.3	0.67	0.99	43.8
Approach		314	2.0	0.407	12.7	NA	2.4	17.3	0.67	0.85	44.1
North: Challis Street											
7	L	181	0.0	0.224	10.5	LOS B	0.9	6.1	0.47	0.76	46.5
9	R	15	0.0	0.050	18.7	LOS C	0.2	1.2	0.69	0.90	39.5
Approach		196	0.0	0.224	11.1	LOS B	0.9	6.1	0.48	0.77	45.9
West: Morphett Street (W)											
10	L	499	6.8	0.350	8.4	LOS A	0.0	0.0	0.00	0.71	49.0
11	T	99	0.0	0.350	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		598	5.6	0.350	7.0	NA	0.0	0.0	0.00	0.60	50.5
All Vehicles		1107	3.6	0.407	9.4	NA	2.4	17.3	0.28	0.70	47.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 18 PM

Cowper Street - Morphett Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	44	0.0	0.363	8.2	LOS A	0.0	0.0	0.00	1.04	49.0
2	T	619	1.7	0.363	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		663	1.6	0.363	0.5	NA	0.0	0.0	0.00	0.07	59.1
North: Cowper Street (N)											
8	T	244	4.3	0.258	5.4	LOS A	2.1	15.4	0.69	0.00	47.7
9	R	84	0.0	0.258	13.8	LOS B	2.1	15.4	0.69	1.02	45.5
Approach		328	3.2	0.258	7.6	NA	2.1	15.4	0.69	0.26	47.1
West: Morphett Street											
10	L	194	1.1	0.599	22.5	LOS C	3.8	26.5	0.78	1.13	37.0
12	R	48	0.0	0.599	22.8	LOS C	3.8	26.5	0.78	1.11	37.0
Approach		242	0.9	0.599	22.6	LOS C	3.8	26.5	0.78	1.12	37.0
All Vehicles		1234	1.9	0.599	6.7	NA	3.8	26.5	0.34	0.33	49.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 19 PM

Northborne Avenue - Cape Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street											
4	L	440	4.8	0.617	15.1	LOS C	5.0	36.2	0.69	1.07	42.5
Approach		440	4.8	0.617	15.1	LOS C	5.0	36.2	0.69	1.07	42.5
North: Northbourn Avenue											
7	L	59	0.0	0.033	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
8	T	436	5.3	0.244	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		495	4.7	0.244	1.0	NA	0.0	0.0	0.00	0.08	58.4
All Vehicles		935	4.7	0.617	7.6	NA	5.0	36.2	0.32	0.55	49.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 20 PM

Cape Street - Badham Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street											
5	T	84	40.0	0.129	7.3	LOS A	1.1	9.6	0.62	0.00	46.7
6	R	29	0.0	0.129	15.7	LOS C	1.1	9.6	0.62	0.99	43.6
Approach		114	29.6	0.129	9.5	NA	1.1	9.6	0.62	0.26	45.8
North: Badham Street											
7	L	69	3.0	0.266	9.6	LOS A	1.2	8.7	0.38	0.62	47.1
9	R	229	0.0	0.266	9.8	LOS A	1.2	8.7	0.38	0.72	47.2
Approach		299	0.7	0.266	9.7	LOS A	1.2	8.7	0.38	0.70	47.2
West: Cape Street											
10	L	322	0.0	0.257	8.2	LOS A	0.0	0.0	0.00	0.74	49.0
11	T	109	38.5	0.257	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		432	9.8	0.257	6.1	NA	0.0	0.0	0.00	0.55	51.4
All Vehicles		844	9.2	0.266	7.8	NA	1.2	9.6	0.22	0.56	49.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 21 PM

Dickson Place - Cape Street
Master Plan 2031 PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cape Street											
1	L	19	0.0	0.721	32.8	LOS D	5.6	45.8	0.85	1.28	31.3
3	R	192	22.0	0.721	34.0	LOS D	5.6	45.8	0.85	1.27	31.3
Approach		211	20.0	0.721	33.9	LOS D	5.6	45.8	0.85	1.27	31.3
East: Dickson Place											
4	L	145	23.2	0.243	9.0	LOS A	0.0	0.0	0.00	0.91	49.0
5	T	272	0.0	0.243	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		417	8.1	0.243	3.2	NA	0.0	0.0	0.00	0.32	55.6
West: Dickson Place											
11	T	116	0.0	0.231	7.2	LOS A	2.0	13.7	0.66	0.00	46.1
12	R	76	0.0	0.231	15.7	LOS C	2.0	13.7	0.66	0.98	43.3
Approach		192	0.0	0.231	10.6	NA	2.0	13.7	0.66	0.39	45.0
All Vehicles		819	9.3	0.721	12.8	NA	5.6	45.8	0.37	0.58	44.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 1 MD

1- Northbourne Avenue - Antill Street - Mouat Street
Master Plan 2031 MD
Signals - Fixed Time Cycle Time = 95 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	88	9.5	0.102	13.5	LOS B	1.4	10.3	0.43	0.69	44.1
2	T	642	4.6	0.712	38.8	LOS D	12.2	88.7	0.97	0.84	27.8
3	R	156	2.7	0.856	61.5	LOS E	8.2	58.8	1.00	0.98	22.7
Approach		886	4.8	0.856	40.3	LOS D	12.2	88.7	0.92	0.85	27.7
East: Antill Street											
4	L	326	0.6	0.413	13.5	LOS B	5.6	39.6	0.49	0.73	43.8
5	T	549	3.8	0.885	44.6	LOS D	18.9	136.5	0.98	0.94	25.8
6	R	368	3.4	0.885	58.2	LOS E	18.9	136.5	1.00	1.04	23.5
Approach		1244	2.9	0.885	40.5	LOS D	18.9	136.5	0.86	0.92	28.0
North: Northbourne Avenue (N)											
7	L	379	3.3	0.367	14.0	LOS B	7.3	52.3	0.51	0.73	43.4
8	T	714	2.4	0.620	37.5	LOS D	10.3	73.3	0.96	0.80	28.2
9	R	143	1.5	0.780	57.8	LOS E	7.2	50.9	1.00	0.91	23.4
Approach		1236	2.6	0.780	32.7	LOS C	10.3	73.3	0.83	0.79	30.8
West: Mouat Street (W)											
10	L	120	1.8	0.863	58.8	LOS E	14.6	105.8	1.00	1.10	23.6
11	T	442	6.2	0.863	50.9	LOS D	14.6	105.8	1.00	1.05	23.8
12	R	202	2.1	0.691	49.6	LOS D	9.3	66.5	0.99	0.86	25.8
Approach		764	4.4	0.863	51.8	LOS D	14.6	105.8	1.00	1.01	24.3
All Vehicles		4131	3.5	0.885	40.2	LOS D	18.9	136.5	0.89	0.88	27.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	3	18.9	LOS B	0.0	0.0	0.63	0.63
P2	Across S approach	3	34.5	LOS D	0.0	0.0	0.85	0.85
P3	Across E approach	18	41.7	LOS E	0.0	0.0	0.94	0.94
P5	Across N approach	12	18.9	LOS B	0.0	0.0	0.63	0.63
P6	Across N approach	12	38.9	LOS D	0.0	0.0	0.91	0.91
P7	Across W approach	3	41.7	LOS E	0.0	0.0	0.94	0.94
All Pedestrians		51	33.9	LOS D			0.83	0.83

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 2 MD

Northbourne Avenue Service Road - Antill Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	29	21.4	0.089	18.2	LOS C	0.3	2.5	0.70	0.90	40.5
Approach		29	21.4	0.089	18.2	LOS C	0.3	2.5	0.70	0.90	40.5
West: Antill Street (W)											
10	L	6	33.3	0.272	10.2	LOS B	0.0	0.0	0.00	1.23	48.1
11	T	971	4.3	0.272	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		977	4.5	0.272	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		1006	5.0	0.272	0.6	NA	0.3	2.5	0.02	0.03	59.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 3 MD

Antill Street - Challis Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	173	19.5	0.650	31.2	LOS D	3.5	28.3	0.89	1.16	32.8
Approach		173	19.5	0.650	31.2	LOS D	3.5	28.3	0.89	1.16	32.8
East: Antil Street (W)											
4	L	17	100.0	0.054	11.8	LOS B	0.1	1.5	0.24	0.56	46.4
5	T	1088	0.4	0.295	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1105	1.9	0.295	0.2	NA	0.1	1.5	0.00	0.01	59.7
West: Antill Street											
11	T	939	1.3	0.256	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	63	56.7	0.427	42.0	LOS E	1.4	14.5	0.90	1.03	28.6
Approach		1002	4.8	0.427	2.6	NA	1.4	14.5	0.06	0.07	56.1
All Vehicles		2280	4.5	0.650	3.6	NA	3.5	28.3	0.09	0.12	54.7

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 4 MD

Antill Street - Badham Street
Master Plan 2031 MD
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	642	0.0	1.440	424.4	LOS F	154.2	1087.4	1.00	7.59	4.7
3	R	95	6.7	1.440	424.4	LOS F	154.2	1087.4	1.00	5.76	4.7
Approach		737	0.9	1.440	424.4	LOS F	154.2	1087.4	1.00	7.36	4.7
East: Antill Street (W)											
4	L	109	0.0	0.180	12.6	LOS B	0.6	4.3	0.62	0.85	44.7
5	T	564	3.0	0.155	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		674	2.5	0.180	2.1	NA	0.6	4.3	0.10	0.14	56.8
West: Antill Street (W)											
11	T	303	2.8	0.167	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	745	0.3	0.869	20.8	LOS C	14.8	104.2	0.84	1.50	38.2
Approach		1048	1.0	0.869	14.8	NA	14.8	104.2	0.60	1.07	42.7
South West: Median (RT Stage 2)											
32	R	95	6.7	0.096	9.4	LOS A	0.4	2.4	0.38	0.67	33.0
Approach		95	6.7	0.096	9.4	LOS A	0.4	2.4	0.38	0.67	33.0
All Vehicles		2554	1.6	1.440	129.4	NA	154.2	1087.4	0.57	2.62	12.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 5 MD

Antill Street - Dickson Shops Access Road
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	189	0.0	0.248	10.4	LOS B	1.0	7.3	0.51	0.75	46.8
Approach		189	0.0	0.248	10.4	LOS B	1.0	7.3	0.51	0.75	46.8
East: Antill Street (W)											
4	L	1	0.0	0.134	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	484	3.5	0.134	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		485	3.5	0.134	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		675	2.5	0.248	2.9	NA	1.0	7.3	0.14	0.21	55.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 6 MD

Antill Street - Cowper Street
Master Plan 2031 MD
Signals - Fixed Time Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	99	0.0	0.177	24.5	LOS C	2.1	15.0	0.76	0.76	35.8
3	R	404	0.5	0.831	34.7	LOS C	12.8	90.0	0.95	0.98	30.8
Approach		503	0.4	0.831	32.7	LOS C	12.8	90.0	0.91	0.94	31.7
East: Antill Street (E)											
4	L	196	1.1	0.354	25.7	LOS C	4.5	32.0	0.81	0.80	35.2
5	T	385	4.4	0.643	27.3	LOS C	5.7	41.3	0.98	0.83	32.5
Approach		581	3.3	0.643	26.7	LOS C	5.7	41.3	0.93	0.82	33.4
West: Antill Street (W)											
11	T	291	2.9	0.480	25.8	LOS C	4.1	29.2	0.95	0.76	33.3
12	R	107	5.9	0.293	30.3	LOS C	2.7	20.2	0.88	0.77	32.8
Approach		398	3.7	0.480	27.0	LOS C	4.1	29.2	0.93	0.76	33.2
All Vehicles		1482	2.4	0.831	28.8	LOS C	12.8	90.0	0.92	0.85	32.7

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	3	24.3	LOS C	0.0	0.0	0.90	0.90
P2	Across S approach	3	22.5	LOS C	0.0	0.0	0.87	0.87
P3	Across E approach	12	24.3	LOS C	0.0	0.0	0.90	0.90
P4	Across E approach	12	21.7	LOS C	0.0	0.0	0.85	0.85
All Pedestrians		30	23.1	LOS C			0.88	0.88

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 7 MD

Antill Street - Rosevear Place
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	34	0.0	0.054	11.6	LOS B	0.2	1.3	0.51	0.76	45.5
3	R	1	0.0	0.054	11.2	LOS B	0.2	1.3	0.51	0.79	45.8
Approach		35	0.0	0.054	11.6	LOS B	0.2	1.3	0.51	0.76	45.5
East: Antill Street (E)											
4	L	1	0.0	0.149	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	539	3.1	0.149	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		540	3.1	0.149	0.0	NA	0.0	0.0	0.00	0.00	60.0
West: Antill Street											
11	T	493	1.7	0.135	1.5	LOS A	1.1	7.7	0.26	0.00	55.3
12	R	1	0.0	0.135	11.1	LOS B	1.1	7.7	0.51	0.96	48.1
Approach		494	1.7	0.135	1.5	NA	1.1	7.7	0.26	0.00	55.3
South West: Median (RT Stage 2)											
32	R	1	0.0	0.002	12.7	LOS B	0.0	0.1	0.53	0.64	28.4
Approach		1	0.0	0.002	12.7	LOS B	0.0	0.1	0.53	0.64	28.4
All Vehicles		1069	2.4	0.149	1.1	NA	1.1	7.7	0.14	0.03	57.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 8 MD

Badham Street - Dickson Shop Access Road
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	459	0.0	0.863	33.0	LOS D	14.2	99.5	1.00	0.00	29.1
3	R	280	0.0	0.863	41.4	LOS E	14.2	99.5	1.00	1.61	29.0
Approach		739	0.0	0.863	36.2	NA	14.2	99.5	1.00	0.61	29.1
East: Dickson Shop Access Road (E)											
4	L	107	0.0	2.729	1622.9	LOS F	109.0	763.1	1.00	5.24	1.3
6	R	147	0.0	2.729	1623.1	LOS F	109.0	763.1	1.00	4.35	1.3
Approach		255	0.0	2.729	1623.0	LOS F	109.0	763.1	1.00	4.73	1.3
North: Badham Street (N)											
7	L	141	0.0	0.464	8.2	LOS A	0.0	0.0	0.00	0.98	49.0
8	T	709	0.3	0.464	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		851	0.2	0.464	1.4	NA	0.0	0.0	0.00	0.16	57.8
All Vehicles		1844	0.1	2.729	239.3	NA	109.0	763.1	0.54	0.97	7.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 9 MD

Cowper Street - Dickson Shop Access Road
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	183	0.0	0.272	8.2	LOS A	0.0	0.0	0.00	0.88	49.0
2	T	309	0.7	0.272	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		493	0.4	0.272	3.0	NA	0.0	0.0	0.00	0.33	55.4
North: Cowper Street (N)											
8	T	194	3.3	0.231	3.1	LOS A	1.5	10.6	0.50	0.00	50.3
9	R	109	0.0	0.231	11.6	LOS B	1.5	10.6	0.50	0.91	46.8
Approach		303	2.1	0.231	6.2	NA	1.5	10.6	0.50	0.33	49.0
West: Dickson Shop Access Road (W)											
10	L	189	0.0	0.269	11.0	LOS B	1.2	8.2	0.52	0.75	46.1
12	R	11	0.0	0.269	11.6	LOS B	1.2	8.2	0.52	0.89	45.9
Approach		200	0.0	0.269	11.0	LOS B	1.2	8.2	0.52	0.76	46.1
All Vehicles		996	0.8	0.272	5.6	NA	1.5	10.6	0.26	0.41	51.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 10 MD

Badham Street - Woolley Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	128	0.0	0.353	8.2	LOS A	0.0	0.0	0.00	0.96	49.0
2	T	518	0.0	0.353	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		646	0.0	0.353	1.6	NA	0.0	0.0	0.00	0.19	57.4
North: Badham Street (N)											
8	T	560	0.4	0.798	19.3	LOS C	14.4	100.9	1.00	0.00	35.7
9	R	326	0.0	0.798	27.7	LOS D	14.4	100.9	1.00	1.48	35.5
Approach		886	0.2	0.798	22.4	NA	14.4	100.9	1.00	0.54	35.6
West: Woolley Street											
10	L	225	0.0	1.588	584.5	LOS F	76.4	534.6	1.00	5.69	3.5
12	R	72	0.0	1.588	584.8	LOS F	76.4	534.6	1.00	4.30	3.5
Approach		297	0.0	1.588	584.6	LOS F	76.4	534.6	1.00	5.35	3.5
All Vehicles		1829	0.1	1.588	106.3	NA	76.4	534.6	0.65	1.20	15.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 11 MD

Badham Street - Dickson Place
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	1	0.0	0.001	0.9	LOS A	0.0	0.0	0.32	0.00	53.1
3	R	1	0.0	0.001	9.3	LOS A	0.0	0.0	0.32	0.73	48.2
Approach		2	0.0	0.001	5.1	NA	0.0	0.0	0.32	0.36	50.5
East: Dickson Place											
4	L	1	0.0	0.335	9.7	LOS A	1.7	11.8	0.37	0.62	47.1
6	R	253	0.0	0.335	10.0	LOS B	1.7	11.8	0.37	0.68	47.0
Approach		254	0.0	0.335	10.0	LOS B	1.7	11.8	0.37	0.68	47.0
North: Badham Street (N)											
7	L	236	0.9	0.135	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
8	T	1	0.0	0.135	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		237	0.9	0.135	8.2	NA	0.0	0.0	0.00	0.67	49.0
All Vehicles		493	0.4	0.335	9.1	NA	1.7	11.8	0.19	0.67	47.9

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 12 MD

Cowper Street - Dickson Place
Master Plan 2031 MD
Signals - Fixed Time   Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	413	0.0	1.093	165.7	LOS F	80.5	570.5	1.00	1.47	10.9
2	T	301	3.5	1.093	157.5	LOS F	80.5	570.5	1.00	1.47	10.9
Approach		714	1.5	1.093	162.3	LOS F	80.5	570.5	1.00	1.47	10.9
North: Cowper Street (N)											
8	T	118	10.7	0.146	19.4	LOS B	3.9	29.7	0.60	0.49	37.7
9	R	107	27.5	0.842	48.7	LOS D	4.4	38.1	1.00	0.90	25.9
Approach		225	18.7	0.842	33.4	LOS C	4.4	38.1	0.79	0.69	31.0
West: Dickson Place (W)											
10	L	219	18.3	1.100	175.6	LOS F	67.1	497.0	1.00	1.31	10.3
12	R	366	0.0	1.100	175.0	LOS F	67.1	497.0	1.00	1.31	10.3
Approach		585	6.8	1.100	175.2	LOS F	67.1	497.0	1.00	1.31	10.3
All Vehicles		1524	6.1	1.100	148.2	LOS F	80.5	570.5	0.97	1.29	11.7

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	71	54.2	LOS E	0.2	0.2	0.95	0.95
P2	Across S approach	71	54.2	LOS E	0.2	0.2	0.95	0.95
P7	Across W approach	12	54.2	LOS E	0.0	0.0	0.95	0.95
P8	Across W approach	12	54.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		166	54.2	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 13 MD

Challis Street - Cape Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	1	0.0	0.376	8.7	LOS A	2.3	16.3	0.26	0.52	48.0
2	T	118	10.7	0.376	0.5	LOS A	2.3	16.3	0.26	0.00	53.9
3	R	408	0.0	0.376	8.9	LOS A	2.3	16.3	0.26	0.69	47.9
Approach		527	2.4	0.376	7.1	NA	2.3	16.3	0.26	0.54	49.1
East: Cape Street											
4	L	88	0.0	1.572	547.3	LOS F	150.1	1096.6	1.00	5.82	3.7
5	T	423	0.0	1.572	546.0	LOS F	150.1	1096.6	1.00	4.61	3.7
6	R	69	42.4	1.572	549.3	LOS F	150.1	1096.6	1.00	4.20	3.7
Approach		581	5.1	1.572	546.6	LOS F	150.1	1096.6	1.00	4.75	3.7
North: Challis Street											
7	L	40	100.0	0.099	12.6	LOS B	0.4	4.1	0.32	0.46	45.0
8	T	6	0.0	0.099	0.7	LOS A	0.4	4.1	0.32	0.00	52.5
9	R	61	20.7	0.099	10.0	LOS A	0.4	4.1	0.32	0.67	47.5
Approach		107	49.0	0.099	10.4	NA	0.4	4.1	0.32	0.55	46.7
West: Cape Street											
10	L	1	0.0	0.470	45.6	LOS E	1.8	12.8	0.90	0.73	26.4
11	T	1	0.0	0.470	44.4	LOS E	1.8	12.8	0.90	1.05	26.6
12	R	61	0.0	0.470	45.9	LOS E	1.8	12.8	0.90	1.05	26.4
Approach		63	0.0	0.470	45.9	LOS E	1.8	12.8	0.90	1.04	26.4
All Vehicles		1279	7.4	1.572	254.4	NA	150.1	1096.6	0.63	2.48	7.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 14 MD

Cape Street - Woolley Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	335	8.8	0.193	2.9	LOS A	1.7	12.7	0.60	0.00	50.0
6	R	1	0.0	0.193	11.4	LOS B	1.7	12.7	0.60	1.02	48.6
Approach		336	8.8	0.193	3.0	NA	1.7	12.7	0.60	0.00	49.9
North: Woolley Street											
7	L	1	0.0	0.792	40.6	LOS E	6.1	42.5	0.92	1.45	28.1
9	R	206	0.0	0.792	40.9	LOS E	6.1	42.5	0.92	1.35	28.1
Approach		207	0.0	0.792	40.9	LOS E	6.1	42.5	0.92	1.35	28.1
West: Cape Street (W)											
10	L	206	0.0	0.263	8.2	LOS A	0.0	0.0	0.00	0.84	49.0
11	T	244	16.4	0.263	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		451	8.9	0.263	3.7	NA	0.0	0.0	0.00	0.38	54.4
All Vehicles		994	7.0	0.792	11.2	NA	6.1	42.5	0.40	0.46	44.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 15 MD

Cowper Street - Davenport Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	632	1.7	0.354	3.9	LOS A	4.6	33.0	0.74	0.00	48.1
3	R	8	0.0	0.354	12.3	LOS B	4.6	33.0	0.74	0.98	48.2
Approach		640	1.6	0.354	4.0	NA	4.6	33.0	0.74	0.01	48.1
East: Davenport Street (E)											
4	L	8	0.0	0.628	49.7	LOS E	2.9	20.4	0.91	1.13	25.2
6	R	86	0.0	0.628	49.9	LOS E	2.9	20.4	0.91	1.12	25.2
Approach		95	0.0	0.628	49.9	LOS E	2.9	20.4	0.91	1.13	25.2
North: Cowper Street											
7	L	101	0.0	0.269	8.2	LOS A	0.0	0.0	0.00	0.96	49.0
8	T	383	3.3	0.269	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		484	2.6	0.269	1.7	NA	0.0	0.0	0.00	0.20	57.3
All Vehicles		1219	1.9	0.628	6.7	NA	4.6	33.0	0.46	0.17	47.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 16 MD

Northbourne Avenue - Morphett Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	1144	4.0	0.213	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	282	3.0	1.148	189.9	LOS F	31.2	223.7	1.00	3.04	9.9
Approach		1425	3.7	1.148	37.5	NA	31.2	223.7	0.20	0.60	29.6
East: RoadName											
4	L	11	0.0	0.061	27.1	LOS D	0.2	1.3	0.86	0.95	34.6
Approach		11	0.0	0.061	27.1	LOS D	0.2	1.3	0.86	0.95	34.6
North: Northbourne Avenue (N)											
7	L	13	16.7	0.297	8.8	LOS A	0.0	0.0	0.00	1.11	49.0
8	T	1615	2.0	0.297	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1627	2.1	0.297	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		3063	2.8	1.148	17.6	NA	31.2	223.7	0.09	0.29	40.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 17 MD

Morphett Street - Challis Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	11	0.0	0.128	2.3	LOS A	0.5	3.7	0.48	0.00	49.3
6	R	109	0.0	0.128	10.6	LOS B	0.5	3.7	0.48	0.77	46.6
Approach		120	0.0	0.128	9.8	NA	0.5	3.7	0.48	0.70	46.8
North: Challis Street											
7	L	95	0.0	0.103	9.5	LOS A	0.4	2.7	0.36	0.68	47.4
9	R	1	0.0	0.002	12.2	LOS B	0.0	0.1	0.49	0.65	44.8
Approach		96	0.0	0.103	9.6	LOS A	0.4	2.7	0.36	0.68	47.4
West: Morphett Street (W)											
10	L	377	3.4	0.252	8.3	LOS A	0.0	0.0	0.00	0.70	49.0
11	T	59	3.6	0.252	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		436	3.4	0.252	7.2	NA	0.0	0.0	0.00	0.61	50.2
All Vehicles		652	2.3	0.252	8.0	NA	0.5	3.7	0.14	0.64	49.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 18 MD

Cowper Street - Morphett Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	13	0.0	0.289	8.2	LOS A	0.0	0.0	0.00	1.07	49.0
2	T	514	2.0	0.289	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		526	2.0	0.289	0.2	NA	0.0	0.0	0.00	0.03	59.7
North: Cowper Street (N)											
8	T	286	3.7	0.280	3.9	LOS A	2.2	15.8	0.58	0.00	49.3
9	R	101	2.1	0.280	12.4	LOS B	2.2	15.8	0.58	0.97	46.7
Approach		387	3.3	0.280	6.1	NA	2.2	15.8	0.58	0.25	48.6
West: Morphett Street											
10	L	122	0.0	0.337	16.2	LOS C	1.6	10.9	0.65	0.93	41.4
12	R	34	0.0	0.337	16.5	LOS C	1.6	10.9	0.65	0.95	41.3
Approach		156	0.0	0.337	16.3	LOS C	1.6	10.9	0.65	0.94	41.4
All Vehicles		1069	2.2	0.337	4.7	NA	2.2	15.8	0.31	0.24	52.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 19 MD

Northborne Avenue - Cape Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street											
4	L	482	2.6	0.608	13.8	LOS B	5.2	37.2	0.65	1.01	43.5
Approach		482	2.6	0.608	13.8	LOS B	5.2	37.2	0.65	1.01	43.5
North: Northbourn Avenue											
7	L	65	0.0	0.037	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
8	T	351	3.3	0.194	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		416	2.8	0.194	1.3	NA	0.0	0.0	0.00	0.10	58.0
All Vehicles		898	2.7	0.608	8.0	NA	5.2	37.2	0.35	0.59	49.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 20 MD

Cape Street - Badham Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street											
5	T	181	16.3	0.469	10.3	LOS B	5.7	43.0	0.83	0.00	42.2
6	R	173	0.0	0.469	18.7	LOS C	5.7	43.0	0.83	1.11	40.9
Approach		354	8.3	0.469	14.4	NA	5.7	43.0	0.83	0.54	41.6
North: Badham Street											
7	L	274	0.0	0.470	10.8	LOS B	3.4	23.7	0.36	0.65	46.2
9	R	227	0.0	0.470	11.0	LOS B	3.4	23.7	0.36	0.83	46.0
Approach		501	0.0	0.470	10.9	LOS B	3.4	23.7	0.36	0.73	46.1
West: Cape Street											
10	L	166	0.0	0.152	8.2	LOS A	0.0	0.0	0.00	0.76	49.0
11	T	80	50.0	0.152	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		246	16.2	0.152	5.5	NA	0.0	0.0	0.00	0.51	52.1
All Vehicles		1101	6.3	0.470	10.8	NA	5.7	43.0	0.43	0.62	45.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 21 MD

Dickson Place - Cape Street
Master Plan 2031 MD
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cape Street											
1	L	8	0.0	1.440	431.8	LOS F	91.5	692.1	1.00	6.00	4.6
3	R	415	9.6	1.440	432.5	LOS F	91.5	692.1	1.00	5.17	4.6
Approach		423	9.5	1.440	432.4	LOS F	91.5	692.1	1.00	5.18	4.6
East: Dickson Place											
4	L	278	10.6	0.302	8.6	LOS A	0.0	0.0	0.00	0.82	49.0
5	T	244	0.0	0.302	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		522	5.6	0.302	4.6	NA	0.0	0.0	0.00	0.43	53.6
West: Dickson Place											
11	T	173	0.0	0.260	10.5	LOS B	3.1	21.8	0.78	0.00	43.0
12	R	63	3.3	0.260	19.0	LOS C	3.1	21.8	0.78	1.03	41.4
Approach		236	0.9	0.260	12.8	NA	3.1	21.8	0.78	0.28	42.6
All Vehicles		1181	6.1	1.440	159.5	NA	91.5	692.1	0.51	2.10	11.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 1 EV

1- Northbourne Avenue - Antill Street - Mouat Street
Master Plan 2031 EV
Signals - Fixed Time   Cycle Time = 85 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
1	L	59	3.6	0.054	12.1	LOS B	0.7	5.3	0.41	0.67	45.2
2	T	368	2.9	0.362	29.5	LOS C	5.5	39.2	0.87	0.70	31.6
3	R	118	3.6	0.833	56.6	LOS E	5.6	40.2	1.00	0.95	23.9
Approach		545	3.1	0.833	33.5	LOS C	5.6	40.2	0.85	0.75	30.4
East: Antill Street											
4	L	284	0.0	0.351	13.2	LOS B	4.4	31.1	0.50	0.73	44.0
5	T	516	3.3	0.862	40.4	LOS D	14.7	105.9	0.98	0.93	27.2
6	R	253	3.3	0.734	44.9	LOS D	10.6	76.3	0.99	0.90	27.2
Approach		1053	2.4	0.862	34.1	LOS C	14.7	105.9	0.85	0.87	30.4
North: Northbourne Avenue (N)											
7	L	206	4.1	0.178	10.8	LOS B	2.3	16.8	0.37	0.69	46.4
8	T	724	1.7	0.561	31.6	LOS C	9.0	64.2	0.93	0.78	30.6
9	R	116	0.0	0.798	55.2	LOS E	5.4	37.5	1.00	0.91	24.1
Approach		1046	2.0	0.798	30.1	LOS C	9.0	64.2	0.83	0.78	31.8
West: Mouat Street (W)											
10	L	53	0.0	0.820	54.0	LOS D	10.6	76.5	1.00	1.01	25.1
11	T	362	4.7	0.820	45.1	LOS D	10.6	76.5	1.00	0.99	25.4
12	R	274	0.0	0.820	51.2	LOS D	10.2	73.6	1.00	0.96	25.5
Approach		688	2.4	0.820	48.2	LOS D	10.6	76.5	1.00	0.98	25.4
All Vehicles		3333	2.4	0.862	35.7	LOS D	14.7	105.9	0.88	0.84	29.6

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	1	19.1	LOS B	0.0	0.0	0.67	0.67
P2	Across S approach	1	33.1	LOS D	0.0	0.0	0.88	0.88
P3	Across E approach	2	36.7	LOS D	0.0	0.0	0.93	0.93
P5	Across N approach	3	19.1	LOS B	0.0	0.0	0.67	0.67
P6	Across N approach	3	36.7	LOS D	0.0	0.0	0.93	0.93
P7	Across W approach	1	36.7	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		11	30.0	LOS C			0.83	0.83

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 2 EV

Northbourne Avenue Service Road - Antill Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
North West: Northbourne Avenue Service Road											
27	L	42	5.0	0.067	11.7	LOS B	0.2	1.8	0.53	0.77	45.4
Approach		42	5.0	0.067	11.7	LOS B	0.2	1.8	0.53	0.77	45.4
West: Antill Street (W)											
10	L	6	66.7	0.190	11.3	LOS B	0.0	0.0	0.00	1.27	48.1
11	T	678	3.7	0.190	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		684	4.3	0.190	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		726	4.3	0.190	0.8	NA	0.2	1.8	0.03	0.06	58.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 3 EV

Antill Street - Challis Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	196	11.8	0.453	18.0	LOS C	2.3	17.5	0.75	1.00	40.5
Approach		196	11.8	0.453	18.0	LOS C	2.3	17.5	0.75	1.00	40.5
East: Antil Street (W)											
4	L	8	100.0	0.027	12.0	LOS B	0.1	0.7	0.26	0.56	46.3
5	T	853	0.2	0.231	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		861	1.2	0.231	0.1	NA	0.1	0.7	0.00	0.01	59.8
West: Antill Street											
11	T	634	0.3	0.172	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	88	28.6	0.228	18.1	LOS C	0.7	6.5	0.72	0.92	40.8
Approach		722	3.8	0.228	2.2	NA	0.7	6.5	0.09	0.11	56.7
All Vehicles		1779	3.4	0.453	2.9	NA	2.3	17.5	0.12	0.16	55.6

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 4 EV

Antill Street - Badham Street
Master Plan 2031 EV
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	493	0.0	1.259	264.3	LOS F	96.6	680.1	1.00	5.78	7.3
3	R	147	2.9	1.259	264.1	LOS F	96.6	680.1	1.00	4.53	7.3
Approach		640	0.7	1.259	264.3	LOS F	96.6	680.1	1.00	5.49	7.3
East: Antill Street (W)											
4	L	204	0.0	0.274	11.6	LOS B	1.1	7.7	0.56	0.83	45.6
5	T	476	2.2	0.130	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		680	1.5	0.274	3.5	NA	1.1	7.7	0.17	0.25	54.8
West: Antill Street (W)											
11	T	234	0.9	0.127	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	608	0.0	0.648	13.5	LOS B	6.1	42.5	0.60	0.99	43.8
Approach		842	0.3	0.648	9.8	NA	6.1	42.5	0.44	0.71	47.3
South West: Median (RT Stage 2)											
32	R	147	2.9	0.136	8.9	LOS A	0.6	3.5	0.33	0.65	33.3
Approach		147	2.9	0.136	8.9	LOS A	0.6	3.5	0.33	0.65	33.3
All Vehicles		2309	0.9	1.259	78.4	NA	96.6	680.1	0.51	1.90	18.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 5 EV

Antill Street - Dickson Shops Access Road
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Dickson Shop Access Road											
1	L	131	0.0	0.183	10.7	LOS B	0.7	5.1	0.52	0.76	46.5
Approach		131	0.0	0.183	10.7	LOS B	0.7	5.1	0.52	0.76	46.5
East: Antill Street (W)											
4	L	1	0.0	0.150	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	547	1.9	0.150	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		548	1.9	0.150	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		679	1.6	0.183	2.1	NA	0.7	5.1	0.10	0.15	56.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 6 EV

Antill Street - Cowper Street
Master Plan 2031 EV
Signals - Fixed Time   Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	141	0.0	0.445	29.2	LOS C	3.3	22.9	0.94	0.79	33.3
3	R	152	0.0	0.478	29.0	LOS C	3.5	24.8	0.94	0.79	33.4
Approach		293	0.0	0.478	29.1	LOS C	3.5	24.8	0.94	0.79	33.4
East: Antill Street (E)											
4	L	194	0.0	0.611	30.3	LOS C	4.7	33.1	0.97	0.83	32.7
5	T	408	2.6	0.561	20.6	LOS C	4.8	34.2	0.95	0.78	36.1
Approach		602	1.7	0.611	23.8	LOS C	4.8	34.2	0.96	0.80	35.0
West: Antill Street (W)											
11	T	312	2.0	0.427	19.9	LOS B	3.5	25.0	0.92	0.74	36.6
12	R	74	0.0	0.161	24.0	LOS C	1.4	10.1	0.81	0.75	36.2
Approach		385	1.6	0.427	20.7	LOS C	3.5	25.0	0.90	0.74	36.6
All Vehicles		1280	1.3	0.611	24.1	LOS C	4.8	34.2	0.93	0.78	35.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	5	19.4	LOS B	0.0	0.0	0.88	0.88
P2	Across S approach	5	17.6	LOS B	0.0	0.0	0.84	0.84
P3	Across E approach	7	19.4	LOS B	0.0	0.0	0.88	0.88
P4	Across E approach	7	16.8	LOS B	0.0	0.0	0.82	0.82
All Pedestrians		24	18.3	LOS B			0.85	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 7 EV

Antill Street - Rosevear Place
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rosevear Place (S)											
1	L	53	0.0	0.074	10.8	LOS B	0.3	1.8	0.47	0.74	46.2
3	R	1	0.0	0.074	10.4	LOS B	0.3	1.8	0.47	0.77	46.6
Approach		54	0.0	0.074	10.8	LOS B	0.3	1.8	0.47	0.74	46.2
East: Antill Street (E)											
4	L	1	0.0	0.122	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	444	2.4	0.122	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		445	2.4	0.122	0.0	NA	0.0	0.0	0.00	0.00	60.0
West: Antill Street											
11	T	352	1.8	0.097	1.1	LOS A	0.7	4.8	0.22	0.00	55.8
12	R	1	0.0	0.097	10.3	LOS B	0.7	4.8	0.45	0.93	48.8
Approach		353	1.8	0.097	1.1	NA	0.7	4.8	0.22	0.00	55.8
South West: Median (RT Stage 2)											
32	R	1	0.0	0.002	10.8	LOS B	0.0	0.0	0.46	0.61	30.8
Approach		1	0.0	0.002	10.8	LOS B	0.0	0.0	0.46	0.61	30.8
All Vehicles		853	2.0	0.122	1.2	NA	0.7	4.8	0.12	0.05	57.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 8 EV

Badham Street - Dickson Shop Access Road
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	385	0.0	0.443	12.0	LOS B	5.9	41.6	1.00	0.00	41.0
3	R	116	0.0	0.443	20.4	LOS C	5.9	41.6	1.00	1.13	40.9
Approach		501	0.0	0.443	13.9	NA	5.9	41.6	1.00	0.26	41.0
East: Dickson Shop Access Road (E)											
4	L	91	0.0	1.855	839.6	LOS F	67.8	474.3	1.00	4.45	2.5
6	R	120	0.0	1.855	839.9	LOS F	67.8	474.3	1.00	3.83	2.5
Approach		211	0.0	1.855	839.8	LOS F	67.8	474.3	1.00	4.10	2.5
North: Badham Street (N)											
7	L	145	0.0	0.442	8.2	LOS A	0.0	0.0	0.00	0.97	49.0
8	T	665	0.0	0.442	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		811	0.0	0.442	1.5	NA	0.0	0.0	0.00	0.17	57.7
All Vehicles		1522	0.0	1.855	121.5	NA	67.8	474.3	0.47	0.75	13.7

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 9 EV

Cowper Street - Dickson Shop Access Road
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	99	0.0	0.167	8.2	LOS A	0.0	0.0	0.00	0.90	49.0
2	T	204	0.0	0.167	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		303	0.0	0.167	2.7	NA	0.0	0.0	0.00	0.29	55.9
North: Cowper Street (N)											
8	T	225	0.0	0.160	1.5	LOS A	1.0	7.2	0.33	0.00	53.6
9	R	42	0.0	0.160	10.0	LOS A	1.0	7.2	0.33	0.94	48.4
Approach		267	0.0	0.160	2.9	NA	1.0	7.2	0.33	0.15	52.7
West: Dickson Shop Access Road (W)											
10	L	88	0.0	0.108	9.5	LOS A	0.4	3.1	0.37	0.64	47.5
12	R	6	0.0	0.108	10.1	LOS B	0.4	3.1	0.37	0.82	47.2
Approach		95	0.0	0.108	9.5	LOS A	0.4	3.1	0.37	0.65	47.5
All Vehicles		665	0.0	0.167	3.7	NA	1.0	7.2	0.19	0.29	53.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 10 EV

Badham Street - Woolley Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	286	0.0	0.333	8.2	LOS A	0.0	0.0	0.00	0.83	49.0
2	T	316	0.0	0.333	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		602	0.0	0.333	3.9	NA	0.0	0.0	0.00	0.40	54.2
North: Badham Street (N)											
8	T	446	0.0	0.818	16.9	LOS C	14.5	101.2	1.00	0.00	36.8
9	R	408	0.0	0.818	25.4	LOS D	14.5	101.2	1.00	1.51	36.6
Approach		855	0.0	0.818	20.9	NA	14.5	101.2	1.00	0.72	36.7
West: Woolley Street											
10	L	183	0.0	1.282	332.2	LOS F	43.0	300.8	1.00	4.21	5.9
12	R	61	0.0	1.282	332.5	LOS F	43.0	300.8	1.00	3.11	5.9
Approach		244	0.0	1.282	332.3	LOS F	43.0	300.8	1.00	3.94	5.9
All Vehicles		1701	0.0	1.282	59.6	NA	43.0	300.8	0.65	1.07	22.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 11 EV

Badham Street - Dickson Place
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
2	T	1	0.0	0.001	0.6	LOS A	0.0	0.0	0.27	0.00	54.2
3	R	1	0.0	0.001	9.0	LOS A	0.0	0.0	0.27	0.74	48.3
Approach		2	0.0	0.001	4.8	NA	0.0	0.0	0.27	0.37	51.1
East: Dickson Place											
4	L	1	0.0	0.371	9.3	LOS A	2.0	14.0	0.32	0.60	47.4
6	R	295	0.0	0.371	9.6	LOS A	2.0	14.0	0.32	0.66	47.4
Approach		296	0.0	0.371	9.6	LOS A	2.0	14.0	0.32	0.66	47.4
North: Badham Street (N)											
7	L	166	0.0	0.095	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
8	T	1	0.0	0.095	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		167	0.0	0.095	8.1	NA	0.0	0.0	0.00	0.66	49.0
All Vehicles		465	0.0	0.371	9.1	NA	2.0	14.0	0.21	0.66	48.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 12 EV

Cowper Street - Dickson Place
Master Plan 2031 EV
Signals - Fixed Time   Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	427	0.0	0.807	42.8	LOS D	32.4	228.3	0.94	0.91	27.9
2	T	183	2.3	0.807	34.7	LOS C	32.4	228.3	0.94	0.87	28.2
Approach		611	0.7	0.807	40.4	LOS D	32.4	228.3	0.94	0.90	28.0
North: Cowper Street (N)											
8	T	122	3.4	0.129	15.3	LOS B	3.6	25.7	0.54	0.44	40.7
9	R	126	15.0	0.753	40.6	LOS D	4.6	36.6	0.97	0.87	28.5
Approach		248	9.3	0.753	28.2	LOS C	4.6	36.6	0.76	0.66	33.4
West: Dickson Place (W)											
10	L	78	29.7	0.804	58.9	LOS E	20.6	152.6	1.00	0.91	23.1
12	R	272	0.0	0.804	57.9	LOS E	20.6	152.6	1.00	0.91	23.1
Approach		349	6.6	0.804	58.2	LOS E	20.6	152.6	1.00	0.91	23.1
All Vehicles		1208	4.2	0.807	43.0	LOS D	32.4	228.3	0.92	0.85	27.2

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	Across S approach	47	54.2	LOS E	0.2	0.2	0.95	0.95
P2	Across S approach	47	54.2	LOS E	0.2	0.2	0.95	0.95
P7	Across W approach	12	54.2	LOS E	0.0	0.0	0.95	0.95
P8	Across W approach	12	54.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		118	54.2	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 13 EV

Challis Street - Cape Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	4	0.0	0.440	8.9	LOS A	2.9	20.6	0.33	0.47	47.7
2	T	131	6.5	0.440	0.7	LOS A	2.9	20.6	0.33	0.00	52.5
3	R	474	0.0	0.440	9.2	LOS A	2.9	20.6	0.33	0.69	47.7
Approach		608	1.4	0.440	7.3	NA	2.9	20.6	0.33	0.54	48.7
East: Cape Street											
4	L	177	0.0	1.776	732.5	LOS F	188.5	1353.5	1.00	7.14	2.8
5	T	381	0.0	1.776	731.2	LOS F	188.5	1353.5	1.00	5.18	2.8
6	R	67	28.1	1.776	733.9	LOS F	188.5	1353.5	1.00	4.86	2.8
Approach		625	3.0	1.776	731.9	LOS F	188.5	1353.5	1.00	5.70	2.8
North: Challis Street											
7	L	23	100.0	0.101	12.6	LOS B	0.5	4.3	0.30	0.58	46.0
8	T	63	3.3	0.101	0.7	LOS A	0.5	4.3	0.30	0.00	53.5
9	R	48	17.4	0.101	9.9	LOS A	0.5	4.3	0.30	0.78	48.2
Approach		135	25.0	0.101	6.0	NA	0.5	4.3	0.30	0.38	50.0
West: Cape Street											
10	L	1	0.0	1.775	777.1	LOS F	50.9	356.6	1.00	4.11	2.7
11	T	1	0.0	1.775	775.8	LOS F	50.9	356.6	1.00	3.70	2.7
12	R	160	0.0	1.775	777.3	LOS F	50.9	356.6	1.00	3.24	2.7
Approach		162	0.0	1.775	777.3	LOS F	50.9	356.6	1.00	3.25	2.7
All Vehicles		1531	4.0	1.776	384.8	NA	188.5	1353.5	0.67	2.92	5.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 14 EV

Cape Street - Woolley Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street (E)											
5	T	318	6.0	0.180	3.2	LOS A	1.6	12.1	0.62	0.00	49.7
6	R	1	0.0	0.180	11.6	LOS B	1.6	12.1	0.62	1.03	48.4
Approach		319	5.9	0.180	3.2	NA	1.6	12.1	0.62	0.00	49.7
North: Woolley Street											
7	L	1	0.0	0.883	47.8	LOS E	9.6	67.3	0.95	1.73	25.7
9	R	259	0.0	0.883	48.1	LOS E	9.6	67.3	0.95	1.60	25.7
Approach		260	0.0	0.883	48.1	LOS E	9.6	67.3	0.95	1.60	25.7
West: Cape Street (W)											
10	L	337	0.0	0.288	8.2	LOS A	0.0	0.0	0.00	0.76	49.0
11	T	164	14.1	0.288	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		501	4.6	0.288	5.5	NA	0.0	0.0	0.00	0.51	52.1
All Vehicles		1080	3.9	0.883	15.1	NA	9.6	67.3	0.41	0.62	41.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:43:58 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WE_EV_MasterPlan2031.sip
8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 15 EV

Cowper Street - Davenport Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street											
2	T	516	0.8	0.287	2.5	LOS A	3.0	20.8	0.61	0.00	49.8
3	R	6	0.0	0.287	11.0	LOS B	3.0	20.8	0.61	0.95	49.1
Approach		522	0.8	0.287	2.6	NA	3.0	20.8	0.61	0.01	49.8
East: Davenport Street (E)											
4	L	13	0.0	0.460	29.4	LOS D	2.1	14.8	0.82	0.94	33.0
6	R	95	0.0	0.460	29.6	LOS D	2.1	14.8	0.82	1.04	33.0
Approach		107	0.0	0.460	29.6	LOS D	2.1	14.8	0.82	1.03	33.0
North: Cowper Street											
7	L	63	0.0	0.215	8.2	LOS A	0.0	0.0	0.00	0.98	49.0
8	T	328	1.3	0.215	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		392	1.1	0.215	1.3	NA	0.0	0.0	0.00	0.16	57.9
All Vehicles		1021	0.8	0.460	5.0	NA	3.0	20.8	0.40	0.17	49.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:43:59 PM
SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 16 EV

Northbourne Avenue - Morphett Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	851	2.7	0.157	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	324	1.7	1.119	161.3	LOS F	31.5	223.6	1.00	3.06	11.3
Approach		1175	2.3	1.119	44.4	NA	31.5	223.6	0.28	0.84	27.1
East: Morphett Street (E)											
4	L	6	0.0	0.030	23.2	LOS C	0.1	0.6	0.83	0.93	36.9
Approach		6	0.0	0.030	23.2	LOS C	0.1	0.6	0.83	0.93	36.9
North: Northbourne Avenue (N)											
7	L	27	0.0	0.274	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
8	T	1480	1.4	0.274	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1507	1.4	0.274	0.1	NA	0.0	0.0	0.00	0.02	59.8
All Vehicles		2688	1.8	1.119	19.6	NA	31.5	223.6	0.12	0.38	39.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 17 EV

Morphett Street - Challis Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	6	0.0	0.153	2.9	LOS A	0.6	4.3	0.52	0.00	48.5
6	R	122	0.0	0.153	11.2	LOS B	0.6	4.3	0.52	0.81	46.0
Approach		128	0.0	0.153	10.7	NA	0.6	4.3	0.52	0.77	46.1
North: Challis Street											
7	L	185	1.1	0.213	10.1	LOS B	0.8	5.9	0.42	0.72	47.0
9	R	1	0.0	0.002	13.0	LOS B	0.0	0.1	0.52	0.66	44.1
Approach		186	1.1	0.213	10.1	LOS B	0.8	5.9	0.42	0.72	47.0
West: Morphett Street (W)											
10	L	429	2.0	0.288	8.3	LOS A	0.0	0.0	0.00	0.71	49.0
11	T	76	0.0	0.288	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		505	1.7	0.288	7.0	NA	0.0	0.0	0.00	0.60	50.3
All Vehicles		820	1.3	0.288	8.3	NA	0.8	5.9	0.18	0.66	48.8

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 18 EV

Cowper Street - Morphett Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	15	0.0	0.243	8.2	LOS A	0.0	0.0	0.00	1.07	49.0
2	T	432	1.0	0.243	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		446	0.9	0.243	0.3	NA	0.0	0.0	0.00	0.04	59.6
North: Cowper Street (N)											
8	T	213	2.0	0.258	2.9	LOS A	1.7	11.7	0.48	0.00	50.5
9	R	131	0.0	0.258	11.3	LOS B	1.7	11.7	0.48	0.90	47.0
Approach		343	1.2	0.258	6.1	NA	1.7	11.7	0.48	0.34	49.2
West: Morphett Street											
10	L	93	0.0	0.254	14.1	LOS B	1.0	7.2	0.59	0.82	43.1
12	R	36	0.0	0.254	14.4	LOS B	1.0	7.2	0.59	0.90	43.0
Approach		128	0.0	0.254	14.2	LOS B	1.0	7.2	0.59	0.84	43.1
All Vehicles		918	0.9	0.258	4.4	NA	1.7	11.7	0.26	0.26	52.6

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 19 EV

Northborne Avenue - Cape Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street											
4	L	436	1.9	0.528	12.5	LOS B	3.9	27.8	0.59	0.91	44.7
Approach		436	1.9	0.528	12.5	LOS B	3.9	27.8	0.59	0.91	44.7
North: Northbourn Avenue											
7	L	160	0.0	0.091	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
8	T	269	2.3	0.148	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		429	1.5	0.148	3.0	NA	0.0	0.0	0.00	0.25	55.4
All Vehicles		865	1.7	0.528	7.8	NA	3.9	27.8	0.30	0.58	49.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 20 EV

Cape Street - Badham Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Cape Street											
5	T	202	9.4	0.379	5.5	LOS A	4.1	30.0	0.67	0.00	47.4
6	R	156	0.0	0.379	13.9	LOS B	4.1	30.0	0.67	0.95	44.8
Approach		358	5.3	0.379	9.1	NA	4.1	30.0	0.67	0.41	46.2
North: Badham Street											
7	L	206	0.0	0.382	9.9	LOS A	2.0	14.1	0.26	0.60	47.1
9	R	213	0.0	0.382	10.1	LOS B	2.0	14.1	0.26	0.77	46.9
Approach		419	0.0	0.382	10.0	LOS A	2.0	14.1	0.26	0.69	47.0
West: Cape Street											
10	L	109	0.0	0.100	8.2	LOS A	0.0	0.0	0.00	0.76	49.0
11	T	55	42.3	0.100	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		164	14.1	0.100	5.5	NA	0.0	0.0	0.00	0.51	52.2
All Vehicles		941	4.5	0.382	8.9	NA	4.1	30.0	0.37	0.55	47.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:44:00 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WE_EV_MasterPlan2031.sip
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MOVEMENT SUMMARY

Site: 21 EV

Dickson Place - Cape Street
Master Plan 2031 EV
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cape Street											
1	L	1	0.0	0.665	29.5	LOS D	4.5	34.6	0.84	1.23	32.9
3	R	198	11.7	0.665	30.2	LOS D	4.5	34.6	0.84	1.20	32.9
Approach		199	11.6	0.665	30.2	LOS D	4.5	34.6	0.84	1.20	32.9
East: Dickson Place											
4	L	251	7.6	0.309	8.5	LOS A	0.0	0.0	0.00	0.84	49.0
5	T	295	0.0	0.309	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		545	3.5	0.309	3.9	NA	0.0	0.0	0.00	0.39	54.4
West: Dickson Place											
11	T	149	0.0	0.126	8.8	LOS A	1.8	12.4	0.75	0.00	45.2
12	R	17	0.0	0.126	17.3	LOS C	1.8	12.4	0.75	1.03	43.2
Approach		166	0.0	0.126	9.7	NA	1.8	12.4	0.75	0.10	45.0
All Vehicles		911	4.6	0.665	10.7	NA	4.5	34.6	0.32	0.51	46.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:44:00 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WE_EV_MasterPlan2031.sip
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APPENDIX D 2012 (RECOMMENDED) SIDRA RESULTS

MOVEMENT SUMMARY

Site: 16 AM - Conversion

Northbourne Avenue - Morphett Street
2012 AM
Signals - Fixed Time Cycle Time = 60 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	755	9.3	0.144	0.0	X	X	X	X	0.00	60.0
3	R	378	1.7	0.868	40.1	LOS D	13.3	94.4	1.00	1.07	29.0
Approach		1133	6.8	0.868	13.4	LOS B	13.3	94.4	0.33	0.36	44.0
East: Morphett Street (E)											
4	L	262	2.0	0.434	20.2	LOS C	5.6	39.7	0.81	0.79	38.7
Approach		262	2.0	0.434	20.2	LOS C	5.6	39.7	0.81	0.79	38.7
North: Northbourne Avenue (N)											
7	L	115	9.2	0.881	32.4	LOS C	29.5	214.8	0.94	1.11	33.6
8	T	2492	4.2	0.881	23.8	LOS C	29.7	215.6	0.94	1.05	34.3
Approach		2606	4.4	0.881	24.1	LOS C	29.7	215.6	0.94	1.06	34.3
All Vehicles		4001	4.9	0.881	20.8	LOS C	29.7	215.6	0.76	0.84	36.9

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Processed: Wednesday, 11 July 2012 12:54:59 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_AM.sip
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MOVEMENT SUMMARY

Site: 16 PM - Conversion

Northbourne Avenue - Morphett Street
2012 PM
Signals - Fixed Time   Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	2455	2.8	0.450	0.1	X	X	X	X	0.00	59.9
3	R	423	0.0	0.554	21.3	LOS C	9.4	65.9	0.80	0.81	38.2
Approach		2878	2.4	0.554	3.2	LOS A	9.4	65.9	0.12	0.12	55.2
East: Morphett Street (E)											
4	L	358	0.6	0.359	11.6	LOS B	4.4	30.9	0.54	0.74	45.4
Approach		358	0.6	0.359	11.6	LOS B	4.4	30.9	0.54	0.74	45.4
North: Northbourne Avenue (N)											
7	L	41	0.0	0.573	25.0	LOS C	9.1	65.5	0.85	0.88	37.5
8	T	1095	3.8	0.573	16.8	LOS B	9.1	65.9	0.85	0.73	38.7
Approach		1136	3.7	0.573	17.1	LOS B	9.1	65.9	0.85	0.74	38.7
All Vehicles		4372	2.6	0.573	7.5	LOS A	9.4	65.9	0.34	0.33	48.9

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Processed: Wednesday, 11 July 2012 2:00:52 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WD_PM.sip
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MOVEMENT SUMMARY

Site: 16 MD - Conversion

Northbourne Avenue - Morphett Street
2012 AM
Signals - Fixed Time   Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	1177	2.6	0.216	0.0	X	X	X	X	0.00	60.0
3	R	293	0.7	0.556	27.0	LOS C	7.4	52.4	0.89	0.82	34.9
Approach		1469	2.2	0.556	5.4	LOS A	7.4	52.4	0.18	0.16	52.3
East: RoadName											
4	L	222	0.9	0.292	12.4	LOS B	3.0	21.0	0.57	0.74	44.7
Approach		222	0.9	0.292	12.4	LOS B	3.0	21.0	0.57	0.74	44.7
North: Northbourne Avenue (N)											
7	L	25	4.2	0.579	19.8	LOS B	11.0	78.3	0.75	0.93	41.2
8	T	1562	1.7	0.579	11.5	LOS B	11.1	78.5	0.75	0.67	43.1
Approach		1587	1.7	0.579	11.6	LOS B	11.1	78.5	0.75	0.67	43.1
All Vehicles		3279	1.9	0.579	8.9	LOS A	11.1	78.5	0.48	0.45	46.9

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Processed: Wednesday, 11 July 2012 2:02:08 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

Project: X:\PROJECT\3002303 Dickson Precinct Traffic and Parking Study\015 Traffic - Intersection Flow Modelling\Dickson Intersections_WE_MD.sip
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MOVEMENT SUMMARY

Site: 16 EV - Conversion

Northbourne Avenue - Morphett Street
2012 EV
Signals - Fixed Time   Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	722	1.5	0.131	0.0	X	X	X	X	0.00	60.0
3	R	315	0.3	0.448	21.8	LOS C	6.9	48.2	0.78	0.79	37.9
Approach		1037	1.1	0.448	6.6	LOS A	6.9	48.2	0.24	0.24	50.8
East: Morphett Street (E)											
4	L	191	0.0	0.189	9.9	LOS A	1.6	11.0	0.40	0.70	47.1
Approach		191	0.0	0.189	9.9	LOS A	1.6	11.0	0.40	0.70	47.1
North: Northbourne Avenue (N)											
7	L	18	0.0	0.434	22.5	LOS C	6.9	48.6	0.77	0.90	39.1
8	T	938	1.0	0.434	14.3	LOS B	6.9	48.7	0.77	0.66	40.8
Approach		956	1.0	0.434	14.5	LOS B	6.9	48.7	0.77	0.66	40.8
All Vehicles		2183	1.0	0.448	10.4	LOS B	6.9	48.7	0.48	0.46	45.6

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Processed: Wednesday, 11 July 2012 2:03:00 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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APPENDIX E 2031 MASTERPLAN (RECOMMENDED) SIDRA RESULTS

MOVEMENT SUMMARY

Site: 3 AM - Conversion

Antill Street - Challis Street
Master Plan 2031 AM
Signals - Fixed Time Cycle Time = 40 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	497	9.3	0.742	19.3	LOS B	7.1	53.6	0.90	0.93	39.5
Approach		497	9.3	0.742	19.3	LOS B	7.1	53.6	0.90	0.93	39.5
East: Antil Street (W)											
4	L	93	20.5	0.159	11.7	LOS B	0.7	6.0	0.54	0.69	45.8
5	T	1398	3.0	0.906	25.4	LOS C	19.5	139.9	1.00	1.22	33.4
Approach		1491	4.1	0.906	24.6	LOS C	19.5	139.9	0.97	1.19	34.0
West: Antill Street											
11	T	1269	1.2	0.494	1.6	LOS A	3.0	21.5	0.49	0.27	51.6
12	R	406	15.0	0.929	25.0	LOS C	8.3	65.7	1.00	0.86	35.9
Approach		1676	4.5	0.929	7.2	LOS A	8.3	65.7	0.61	0.41	46.6
All Vehicles		3663	5.0	0.929	15.9	LOS B	19.5	139.9	0.80	0.80	39.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 4 AM - Conversion

Antill Street - Badham Street
Master Plan 2031 AM
Signals - Fixed Time   Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	562	0.0	0.732	16.0	LOS B	8.0	56.0	0.62	0.83	41.9
3	R	69	12.1	0.428	38.2	LOS D	2.1	16.2	0.98	0.76	29.3
Approach		632	1.3	0.732	18.4	LOS B	8.0	56.0	0.66	0.82	40.0
East: Antill Street (W)											
4	L	93	0.0	0.138	12.8	LOS B	1.1	7.9	0.50	0.68	44.3
5	T	1006	6.1	0.998	66.7	LOS E	26.8	197.4	1.00	1.48	20.5
Approach		1099	5.6	0.998	62.2	LOS E	26.8	197.4	0.96	1.41	21.5
West: Antill Street (W)											
11	T	961	0.0	0.378	4.0	LOS A	5.8	40.9	0.44	0.39	51.5
12	R	416	3.1	1.000 [3]	28.7	LOS C	11.4	81.6	0.96	0.85	33.6
Approach		1377	1.5	1.000	11.4	LOS B	11.4	81.6	0.60	0.53	44.4
All Vehicles		3107	2.9	1.000	30.8	LOS C	26.8	197.4	0.74	0.90	31.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 13 AM - Conversion

Challis Street - Cape Street
Master Plan 2031 AM
Signals - Fixed Time   Cycle Time = 100 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	40	0.0	0.508	33.5	LOS C	12.6	89.9	0.81	0.92	25.9
2	T	701	2.4	0.936	41.4	LOS D	40.3	285.8	0.91	0.95	20.1
3	R	267	0.0	0.936	63.1	LOS E	40.3	285.8	1.00	1.12	16.5
Approach		1008	1.7	0.936	46.8	LOS D	40.3	285.8	0.93	0.99	19.2
East: Cape Street											
4	L	269	0.0	0.932	42.4	LOS D	23.3	163.2	0.97	1.07	28.5
5	T	699	0.0	0.932	48.3	LOS D	26.3	198.1	0.99	1.11	24.4
6	R	51	75.0	0.932	72.0	LOS E	26.3	198.1	1.00	1.16	21.4
Approach		1019	3.7	0.932	47.9	LOS D	26.3	198.1	0.98	1.10	25.2
North: Challis Street											
7	L	42	100.0	0.860	58.3	LOS E	14.0	117.2	1.00	1.11	20.6
8	T	194	1.1	0.860	47.2	LOS D	14.0	117.2	1.00	1.11	18.6
9	R	99	31.9	0.860	56.7	LOS E	14.0	117.2	1.00	1.11	18.5
Approach		335	22.6	0.860	51.4	LOS D	14.0	117.2	1.00	1.11	18.9
West: Cape Street											
10	L	55	0.0	0.779	22.2	LOS C	7.9	55.1	0.47	0.78	22.8
11	T	1	0.0	0.779	14.4	LOS B	7.9	55.1	0.47	0.46	25.8
12	R	261	0.0	0.779	22.5	LOS C	7.9	55.1	0.47	0.81	22.5
Approach		317	0.0	0.779	22.4	LOS C	7.9	55.1	0.47	0.81	22.6
All Vehicles		2679	4.9	0.936	44.9	LOS D	40.3	285.8	0.91	1.03	22.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 16 AM - Conversion

Northbourne Avenue - Morphett Street
Master Plan 2031 AM
Signals - Fixed Time   Cycle Time = 150 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	1090	13.7	0.213	0.0	X	X	X	X	0.00	60.0
3	R	342	3.0	1.000 [3]	56.8	LOS E	20.5	146.9	1.00	0.86	23.8
Approach		1432	9.4	1.000	13.6	LOS B	20.5	146.9	0.24	0.21	43.8
East: Morphett Street (E)											
4	L	162	3.9	0.278	46.7	LOS D	8.6	61.8	0.77	0.80	26.3
Approach		162	3.9	0.278	46.7	LOS D	8.6	61.8	0.77	0.80	26.3
North: Northbourne Avenue (N)											
7	L	99	2.1	0.993	87.4	LOS F	101.6	748.3	1.00	1.17	18.2
8	T	2966	6.5	0.993	79.1	LOS E	101.8	752.2	1.00	1.18	18.3
Approach		3065	6.3	0.993	79.4	LOS E	101.8	752.2	1.00	1.18	18.3
All Vehicles		4659	7.2	1.000	58.0	LOS E	101.8	752.2	0.76	0.86	22.6

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 17 AM - Conversion

Morphett Street - Challis Street
Master Plan 2031 AM
Signals - Fixed Time   Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	141	4.5	0.115	4.9	LOS A	1.9	13.9	0.37	0.31	51.3
6	R	444	0.0	0.798	31.2	LOS C	14.8	103.5	0.78	0.89	32.2
Approach		585	1.1	0.798	24.9	LOS C	14.8	103.5	0.69	0.75	35.4
North: Challis Street											
7	L	764	0.3	0.529	9.0	LOS A	6.4	44.8	0.35	0.70	47.9
9	R	21	0.0	0.078	38.5	LOS D	0.7	4.9	0.86	0.71	29.1
Approach		785	0.3	0.529	9.8	LOS A	6.4	44.8	0.37	0.70	47.1
West: Morphett Street (W)											
10	L	461	3.7	0.763	21.5	LOS C	16.3	117.2	0.86	0.95	38.5
11	T	211	1.0	0.763	13.5	LOS B	16.3	117.2	0.86	0.85	39.5
Approach		672	2.8	0.763	19.0	LOS B	16.3	117.2	0.86	0.92	38.8
All Vehicles		2042	1.3	0.798	17.1	LOS B	16.3	117.2	0.62	0.78	40.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P3	Across E approach	53	34.2	LOS D	0.1	0.1	0.93	0.93
P5	Across N approach	53	33.3	LOS D	0.1	0.1	0.91	0.91
All Pedestrians		106	33.8	LOS D			0.92	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 18 AM - Conversion

Cowper Street - Morphett Street
Master Plan 2031 AM
Signals - Fixed Time   Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	234	0.0	0.896	44.6	LOS D	31.9	236.7	0.99	1.17	27.9
2	T	503	10.0	0.896	36.7	LOS D	31.9	236.7	0.99	1.16	28.0
Approach		737	6.9	0.896	39.2	LOS D	31.9	236.7	0.99	1.17	28.0
North: Cowper Street (N)											
8	T	541	1.6	0.441	6.9	LOS A	10.0	70.9	0.51	0.46	48.4
9	R	322	2.0	0.917	58.9	LOS E	16.0	113.7	1.00	1.03	22.8
Approach		863	1.7	0.917	26.3	LOS C	16.0	113.7	0.69	0.67	34.2
West: Morphett Street											
10	L	160	1.3	0.880	48.6	LOS D	17.7	126.4	1.00	1.12	25.6
12	R	297	2.8	0.880	49.1	LOS D	17.7	126.4	1.00	1.12	25.6
Approach		457	2.3	0.880	48.9	LOS D	17.7	126.4	1.00	1.12	25.6
All Vehicles		2057	3.7	0.917	35.9	LOS D	31.9	236.7	0.87	0.95	29.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P5	Across N approach	53	33.3	LOS D	0.1	0.1	0.91	0.91
P7	Across W approach	53	18.2	LOS B	0.1	0.1	0.68	0.68
All Pedestrians		106	25.8	LOS C			0.79	0.79

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 3 PM - Conversion

Antill Street - Challis Street
Master Plan 2031 PM
Signals - Fixed Time   Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	280	24.8	0.621	15.9	LOS B	5.0	42.6	0.83	0.84	42.3
Approach		280	24.8	0.621	15.9	LOS B	5.0	42.6	0.83	0.84	42.3
East: Antil Street (W)											
4	L	21	80.0	0.042	11.2	LOS B	0.1	1.2	0.32	0.63	48.0
5	T	1413	0.0	0.616	6.4	LOS A	10.7	75.2	0.66	0.59	48.4
Approach		1434	1.2	0.616	6.4	LOS A	10.7	75.2	0.66	0.59	48.4
West: Antill Street											
11	T	857	1.2	0.307	1.1	LOS A	1.8	12.7	0.33	0.19	54.0
12	R	86	48.8	0.472	33.4	LOS C	2.1	21.3	0.96	0.77	32.1
Approach		943	5.6	0.472	4.0	LOS A	2.1	21.3	0.39	0.24	50.8
All Vehicles		2657	5.2	0.621	6.6	LOS A	10.7	75.2	0.58	0.49	48.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:44:46 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 4 PM - Conversion

Antill Street - Badham Street
Master Plan 2031 PM
Signals - Fixed Time   Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	653	0.0	0.910	18.2	LOS B	11.7	81.6	0.64	0.85	40.2
3	R	76	11.1	0.619	51.1	LOS D	3.2	24.4	1.00	0.81	25.0
Approach		728	1.2	0.910	21.6	LOS C	11.7	81.6	0.67	0.85	37.8
East: Antill Street (W)											
4	L	76	0.0	0.148	11.4	LOS B	0.9	6.3	0.39	0.67	45.7
5	T	861	2.0	0.786	31.4	LOS C	16.9	120.1	0.98	0.93	30.6
Approach		937	1.8	0.786	29.8	LOS C	16.9	120.1	0.93	0.91	31.5
West: Antill Street (W)											
11	T	537	1.6	0.378	3.0	LOS A	6.6	46.7	0.34	0.31	53.7
12	R	455	0.5	0.647	29.1	LOS C	14.5	102.1	0.87	0.85	33.3
Approach		992	1.1	0.647	15.0	LOS B	14.5	102.1	0.58	0.55	42.0
All Vehicles		2657	1.3	0.910	22.0	LOS C	16.9	120.1	0.73	0.76	36.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:44:48 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 13 PM - Conversion

Challis Street - Cape Street
Master Plan 2031 PM
Signals - Fixed Time   Cycle Time = 90 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	1	0.0	0.325	24.9	LOS C	6.5	52.2	0.66	0.90	30.7
2	T	238	17.7	0.325	17.1	LOS B	6.5	52.2	0.66	0.57	32.6
3	R	667	0.0	0.803	33.4	LOS C	26.9	188.0	0.92	0.91	24.5
Approach		906	4.6	0.803	29.1	LOS C	26.9	188.0	0.85	0.82	26.2
East: Cape Street											
4	L	137	0.0	0.761	39.9	LOS D	11.2	79.3	0.98	1.00	29.5
5	T	307	1.4	0.761	36.3	LOS D	11.2	79.3	0.99	0.96	28.0
6	R	63	53.3	0.761	56.2	LOS E	7.5	62.6	1.00	0.91	24.8
Approach		507	7.5	0.761	39.8	LOS D	11.2	79.3	0.99	0.97	27.9
North: Challis Street											
7	L	42	100.0	0.426	21.0	LOS C	5.0	42.6	0.65	0.78	34.7
8	T	46	0.0	0.426	9.9	LOS A	5.0	42.6	0.65	0.55	36.8
9	R	135	12.5	0.426	18.7	LOS B	5.0	42.6	0.65	0.82	34.4
Approach		223	26.4	0.426	17.3	LOS B	5.0	42.6	0.65	0.76	34.9
West: Cape Street											
10	L	2	0.0	0.262	9.9	LOS A	0.5	3.6	0.28	0.65	34.6
11	T	1	0.0	0.262	2.0	LOS A	0.5	3.6	0.28	0.21	44.9
12	R	57	0.0	0.262	10.2	LOS B	0.5	3.6	0.28	0.69	34.2
Approach		60	0.0	0.262	10.0	LOS B	0.5	3.6	0.28	0.68	34.3
All Vehicles		1697	8.2	0.803	30.1	LOS C	26.9	188.0	0.85	0.85	27.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:44:49 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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8000072, SMEC AUSTRALIA PTY. LTD., FLOATING

MOVEMENT SUMMARY

Site: 16 PM - Conversion

Northbourne Avenue - Morphett Street
Master Plan 2031 PM
Signals - Fixed Time   Cycle Time = 50 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	2362	3.8	0.436	0.1	X	X	X	X	0.00	59.9
3	R	562	6.0	0.832	28.6	LOS C	15.4	113.3	0.96	1.02	34.1
Approach		2924	4.2	0.832	5.6	LOS A	15.4	113.3	0.18	0.20	52.1
East: Morphett Street (E)											
4	L	57	0.0	0.064	12.8	LOS B	0.6	4.3	0.55	0.68	44.3
Approach		57	0.0	0.064	12.8	LOS B	0.6	4.3	0.55	0.68	44.3
North: Northbourne Avenue (N)											
7	L	36	0.0	0.857	32.4	LOS C	16.1	116.2	0.99	1.08	33.7
8	T	1634	3.9	0.857	24.2	LOS C	16.1	116.6	0.99	1.07	34.0
Approach		1669	3.8	0.857	24.4	LOS C	16.1	116.6	0.99	1.07	34.0
All Vehicles		4651	4.0	0.857	12.4	LOS B	16.1	116.6	0.48	0.52	43.7

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 17 PM - Conversion

Morphett Street - Challis Street
Master Plan 2031 PM
Signals - Fixed Time   Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	42	0.0	0.040	6.1	LOS A	0.5	3.8	0.46	0.35	49.4
6	R	272	2.3	0.547	28.7	LOS C	7.0	49.9	0.90	0.82	33.5
Approach		314	2.0	0.547	25.7	LOS C	7.0	49.9	0.84	0.76	35.0
North: Challis Street											
7	L	181	0.0	0.127	8.3	LOS A	0.6	4.4	0.24	0.65	48.5
9	R	15	0.0	0.040	27.7	LOS C	0.3	2.4	0.80	0.70	34.0
Approach		196	0.0	0.127	9.8	LOS A	0.6	4.4	0.28	0.66	47.0
West: Morphett Street (W)											
10	L	499	6.8	0.536	11.3	LOS B	6.9	50.6	0.55	0.78	46.1
11	T	99	0.0	0.536	3.3	LOS A	6.9	50.6	0.55	0.44	48.7
Approach		598	5.6	0.536	10.0	LOS B	6.9	50.6	0.55	0.73	46.5
All Vehicles		1107	3.6	0.547	14.4	LOS B	7.0	50.6	0.58	0.72	42.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P3	Across E approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
P5	Across N approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		106	24.3	LOS C			0.90	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 18 PM - Conversion

Cowper Street - Morphett Street
Master Plan 2031 PM
Signals - Fixed Time   Cycle Time = 100 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	44	0.0	0.586	25.6	LOS C	18.5	131.3	0.65	1.20	37.6
2	T	619	1.7	0.586	14.7	LOS B	18.5	131.3	0.65	0.63	40.7
Approach		663	1.6	0.586	15.4	LOS B	18.5	131.3	0.65	0.67	40.5
North: Cowper Street (N)											
8	T	244	4.3	0.181	4.1	LOS A	3.5	25.4	0.32	0.27	52.4
9	R	84	0.0	0.591	59.7	LOS E	4.3	29.8	1.00	0.79	22.6
Approach		328	3.2	0.591	18.4	LOS B	4.3	29.8	0.49	0.41	39.2
West: Morphett Street											
10	L	194	1.1	0.282	12.9	LOS B	4.1	28.7	0.46	0.73	44.2
12	R	48	0.0	0.282	13.3	LOS B	4.1	28.7	0.46	0.78	44.1
Approach		242	0.9	0.282	13.0	LOS B	4.1	28.7	0.46	0.74	44.2
All Vehicles		1234	1.9	0.591	15.7	LOS B	18.5	131.3	0.57	0.61	40.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P5	Across N approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
P7	Across W approach	53	10.1	LOS B	0.1	0.1	0.45	0.45
All Pedestrians		106	27.2	LOS C			0.70	0.70

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 3 MD - Conversion

Antill Street - Challis Street
Master Plan 2031 MD
Signals - Fixed Time   Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	173	19.5	0.339	10.8	LOS B	1.7	13.6	0.45	0.71	46.7
Approach		173	19.5	0.339	10.8	LOS B	1.7	13.6	0.45	0.71	46.7
East: Antil Street (W)											
4	L	17	100.0	0.037	11.3	LOS B	0.1	1.0	0.25	0.62	46.4
5	T	1088	0.4	0.432	4.6	LOS A	7.2	50.3	0.48	0.43	51.1
Approach		1105	1.9	0.432	4.7	LOS A	7.2	50.3	0.48	0.43	51.0
West: Antill Street											
11	T	939	1.3	0.320	0.9	LOS A	2.0	14.4	0.29	0.16	54.8
12	R	63	56.7	0.432	39.5	LOS D	1.9	19.8	0.97	0.76	29.6
Approach		1002	4.8	0.432	3.3	LOS A	2.0	19.8	0.33	0.20	52.0
All Vehicles		2280	4.5	0.432	4.6	LOS A	7.2	50.3	0.41	0.35	51.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 4 MD - Conversion

Antill Street - Badham Street
Master Plan 2031 MD
Signals - Fixed Time Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	642	0.0	0.696	10.7	LOS B	5.7	40.2	0.47	0.74	46.3
3	R	95	6.7	0.563	38.6	LOS D	2.9	21.6	1.00	0.80	29.1
Approach		737	0.9	0.696	14.3	LOS B	5.7	40.2	0.54	0.75	43.1
East: Antill Street (W)											
4	L	109	0.0	0.170	11.6	LOS B	1.2	8.1	0.47	0.69	45.4
5	T	564	3.0	0.933	43.7	LOS D	11.3	80.9	1.00	1.19	26.1
Approach		674	2.5	0.933	38.5	LOS D	11.3	80.9	0.91	1.11	28.1
West: Antill Street (W)											
11	T	555	2.8	0.221	3.4	LOS A	2.9	20.9	0.38	0.32	52.2
12	R	494	0.3	1.000 [3]	25.0	LOS C	11.6	81.6	0.97	0.86	35.6
Approach		1048	1.0	1.000	13.6	LOS B	11.6	81.6	0.66	0.58	42.8
All Vehicles		2459	1.4	1.000	20.6	LOS C	11.6	81.6	0.69	0.77	37.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Processed: Monday, 18 June 2012 1:38:35 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 13 MD - Conversion

Challis Street - Cape Street
Master Plan 2031 MD
Signals - Fixed Time Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	1	0.0	0.201	28.8	LOS C	3.3	24.9	0.75	0.86	28.4
2	T	118	10.7	0.201	20.9	LOS C	3.3	24.9	0.75	0.61	29.7
3	R	408	0.0	0.680	33.3	LOS C	14.0	97.9	0.92	0.85	24.5
Approach		527	2.4	0.680	30.5	LOS C	14.0	97.9	0.88	0.80	25.5
East: Cape Street											
4	L	88	0.0	0.663	33.6	LOS C	9.7	67.8	0.94	0.94	32.5
5	T	423	0.0	0.663	28.6	LOS C	9.7	69.5	0.95	0.86	31.4
6	R	69	42.4	0.663	43.0	LOS D	9.0	69.5	0.97	0.87	29.2
Approach		581	5.1	0.663	31.1	LOS C	9.7	69.5	0.95	0.88	31.3
North: Challis Street											
7	L	40	100.0	0.156	14.7	LOS B	1.2	12.4	0.40	0.69	39.2
8	T	6	0.0	0.156	3.7	LOS A	1.2	12.4	0.40	0.32	46.2
9	R	61	20.7	0.156	12.7	LOS B	1.2	12.4	0.40	0.76	40.0
Approach		107	49.0	0.156	12.9	LOS B	1.2	12.4	0.40	0.71	40.0
West: Cape Street											
10	L	1	0.0	0.244	9.1	LOS A	0.4	2.7	0.25	0.64	35.8
11	T	1	0.0	0.244	1.3	LOS A	0.4	2.7	0.25	0.18	46.3
12	R	61	0.0	0.244	9.4	LOS A	0.4	2.7	0.25	0.69	35.3
Approach		63	0.0	0.244	9.3	LOS A	0.4	2.7	0.25	0.68	35.4
All Vehicles		1279	7.4	0.680	28.3	LOS C	14.0	97.9	0.84	0.82	29.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Processed: Monday, 18 June 2012 1:43:38 PM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 16 MD - Conversion

Northbourne Avenue - Morphett Street
Master Plan 2031 MD
Signals - Fixed Time   Cycle Time = 40 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	1002	4.0	0.185	0.0	X	X	X	X	0.00	60.0
3	R	423	3.0	0.755	23.5	LOS C	8.6	62.0	0.95	0.95	36.9
Approach		1425	3.7	0.755	7.0	LOS A	8.6	62.0	0.28	0.28	50.4
East: RoadName											
4	L	11	0.0	0.013	11.8	LOS B	0.1	0.6	0.57	0.64	45.2
Approach		11	0.0	0.013	11.8	LOS B	0.1	0.6	0.57	0.64	45.2
North: Northbourne Avenue (N)											
7	L	13	16.7	0.793	25.0	LOS C	11.4	81.0	0.95	1.01	38.5
8	T	1615	2.0	0.793	16.1	LOS B	11.4	81.0	0.95	0.96	39.0
Approach		1627	2.1	0.793	16.2	LOS B	11.4	81.0	0.95	0.96	39.0
All Vehicles		3063	2.8	0.793	11.9	LOS B	11.4	81.0	0.64	0.64	43.7

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Processed: Wednesday, 11 July 2012 1:10:54 AM
SIDRA INTERSECTION 5.1.12.2089

SIDRA INTERSECTION

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MOVEMENT SUMMARY

Site: 17 MD - Conversion

Morphett Street - Challis Street
Master Plan 2031 MD
Signals - Fixed Time Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	11	0.0	0.012	7.3	LOS A	0.1	0.9	0.54	0.37	47.9
6	R	109	0.0	0.439	31.2	LOS C	2.6	18.5	0.96	0.78	32.2
Approach		120	0.0	0.439	29.1	LOS C	2.6	18.5	0.92	0.74	33.2
North: Challis Street											
7	L	95	0.0	0.070	8.4	LOS A	0.3	2.1	0.27	0.65	48.3
9	R	1	0.0	0.002	22.2	LOS C	0.0	0.1	0.73	0.62	37.2
Approach		96	0.0	0.070	8.6	LOS A	0.3	2.1	0.27	0.65	48.2
West: Morphett Street (W)											
10	L	377	3.4	0.345	9.5	LOS A	2.4	17.6	0.39	0.74	47.7
11	T	59	3.6	0.345	1.5	LOS A	2.4	17.6	0.39	0.27	51.5
Approach		436	3.4	0.345	8.4	LOS A	2.4	17.6	0.39	0.67	48.2
All Vehicles		652	2.3	0.439	12.2	LOS B	2.6	18.5	0.47	0.68	44.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P3	Across E approach	53	19.4	LOS B	0.1	0.1	0.88	0.88
P5	Across N approach	53	19.4	LOS B	0.1	0.1	0.88	0.88
All Pedestrians		106	19.4	LOS B			0.88	0.88

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 18 MD - Conversion

Cowper Street - Morphett Street
Master Plan 2031 MD
Signals - Fixed Time   Cycle Time = 90 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	13	0.0	0.531	25.8	LOS C	14.5	103.3	0.69	0.94	36.7
2	T	514	2.0	0.531	18.0	LOS B	14.5	103.3	0.69	0.64	38.4
Approach		526	2.0	0.531	18.2	LOS B	14.5	103.3	0.69	0.65	38.4
North: Cowper Street (N)											
8	T	286	3.7	0.221	4.7	LOS A	4.2	30.6	0.37	0.32	51.5
9	R	101	2.1	0.518	51.4	LOS D	4.4	31.5	0.99	0.78	24.8
Approach		387	3.3	0.518	16.9	LOS B	4.4	31.5	0.53	0.44	40.2
West: Morphett Street											
10	L	122	0.0	0.165	11.7	LOS B	2.0	14.1	0.39	0.71	45.3
12	R	34	0.0	0.165	12.1	LOS B	2.0	14.1	0.39	0.76	45.1
Approach		156	0.0	0.165	11.8	LOS B	2.0	14.1	0.39	0.72	45.3
All Vehicles		1069	2.2	0.531	16.8	LOS B	14.5	103.3	0.59	0.58	39.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P5	Across N approach	53	39.2	LOS D	0.1	0.1	0.93	0.93
P7	Across W approach	53	12.3	LOS B	0.1	0.1	0.52	0.52
All Pedestrians		106	25.7	LOS C			0.73	0.73

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 3 EV - Conversion

Antill Street - Challis Street
Master Plan 2031 EV
Signals - Fixed Time   Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	196	11.8	0.284	10.5	LOS B	1.6	12.0	0.47	0.71	46.8
Approach		196	11.8	0.284	10.5	LOS B	1.6	12.0	0.47	0.71	46.8
East: Antil Street (W)											
4	L	8	100.0	0.019	11.5	LOS B	0.0	0.5	0.29	0.61	46.1
5	T	853	0.2	0.385	5.7	LOS A	5.5	38.4	0.56	0.48	49.6
Approach		861	1.2	0.385	5.7	LOS A	5.5	38.4	0.55	0.49	49.6
West: Antill Street											
11	T	634	0.3	0.226	1.0	LOS A	1.2	8.5	0.31	0.17	54.4
12	R	88	28.6	0.378	31.0	LOS C	2.1	18.2	0.93	0.77	32.9
Approach		722	3.8	0.378	4.7	LOS A	2.1	18.2	0.38	0.24	50.4
All Vehicles		1779	3.4	0.385	5.8	LOS A	5.5	38.4	0.48	0.41	49.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 4 EV - Conversion

Antill Street - Badham Street
Master Plan 2031 EV
Signals - Fixed Time   Cycle Time = 40 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Badham Street (S)											
1	L	493	0.0	0.477	9.7	LOS A	2.9	20.4	0.51	0.72	47.1
3	R	147	2.9	0.569	26.9	LOS C	3.0	21.3	0.97	0.82	34.4
Approach		640	0.7	0.569	13.7	LOS B	3.0	21.3	0.61	0.74	43.5
East: Antill Street (W)											
4	L	204	0.0	0.241	10.8	LOS B	1.5	10.8	0.54	0.71	46.1
5	T	476	2.2	0.870	25.6	LOS C	5.9	41.8	1.00	1.07	33.3
Approach		680	1.5	0.870	21.2	LOS C	5.9	41.8	0.86	0.96	36.4
West: Antill Street (W)											
11	T	402	0.9	0.202	5.0	LOS A	2.1	14.5	0.54	0.44	49.4
12	R	440	0.0	1.000 [3]	36.1	LOS D	11.7	81.6	1.00	1.05	30.2
Approach		842	0.3	1.000	21.2	LOS C	11.7	81.6	0.78	0.76	37.0
All Vehicles		2162	0.8	1.000	19.0	LOS B	11.7	81.6	0.76	0.82	38.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

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MOVEMENT SUMMARY

Site: 13 EV - Conversion

Challis Street - Cape Street
Master Plan 2031 EV
Signals - Fixed Time   Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Challis Street (S)											
1	L	4	0.0	0.199	25.6	LOS C	3.3	24.5	0.71	0.87	30.3
2	T	131	6.5	0.199	17.8	LOS B	3.3	24.5	0.71	0.59	31.9
3	R	474	0.0	0.710	32.0	LOS C	16.2	113.3	0.91	0.87	25.1
Approach		608	1.4	0.710	28.9	LOS C	16.2	113.3	0.87	0.81	26.3
East: Cape Street											
4	L	177	0.0	0.699	28.9	LOS C	10.1	70.9	0.92	0.94	34.5
5	T	381	0.0	0.699	26.7	LOS C	10.1	70.9	0.95	0.88	32.0
6	R	67	28.1	0.699	45.7	LOS D	8.3	62.7	0.99	0.88	27.9
Approach		625	3.0	0.699	29.4	LOS C	10.1	70.9	0.94	0.90	32.2
North: Challis Street											
7	L	23	100.0	0.223	21.3	LOS C	2.2	18.4	0.73	0.78	35.8
8	T	63	3.3	0.223	10.2	LOS B	2.2	18.4	0.73	0.59	37.2
9	R	48	17.4	0.223	19.2	LOS B	2.2	18.4	0.73	0.81	34.9
Approach		135	25.0	0.223	15.4	LOS B	2.2	18.4	0.73	0.70	36.1
West: Cape Street											
10	L	1	0.0	0.627	11.4	LOS B	1.4	9.7	0.27	0.68	32.7
11	T	1	0.0	0.627	3.6	LOS A	1.4	9.7	0.27	0.24	42.4
12	R	160	0.0	0.627	11.7	LOS B	1.4	9.7	0.27	0.72	32.1
Approach		162	0.0	0.627	11.7	LOS B	1.4	9.7	0.27	0.72	32.2
All Vehicles		1531	4.0	0.710	26.1	LOS C	16.2	113.3	0.82	0.83	30.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 16 EV - Conversion

Northbourne Avenue - Morphett Street
Master Plan 2031 EV
Signals - Fixed Time   Cycle Time = 40 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Northbourne Avenue (S)											
2	T	691	2.7	0.127	0.0	X	X	X	X	0.00	60.0
3	R	484	1.7	0.795	24.3	LOS C	10.4	73.6	0.96	0.99	36.3
Approach		1175	2.3	0.795	10.0	LOS B	10.4	73.6	0.40	0.41	47.1
East: Morphett Street (E)											
4	L	6	0.0	0.007	11.3	LOS B	0.0	0.3	0.54	0.63	45.7
Approach		6	0.0	0.007	11.3	LOS B	0.0	0.3	0.54	0.63	45.7
North: Northbourne Avenue (N)											
7	L	27	0.0	0.784	24.6	LOS C	10.5	74.1	0.95	1.00	38.2
8	T	1480	1.4	0.784	16.4	LOS B	10.5	74.3	0.95	0.95	38.8
Approach		1507	1.4	0.784	16.5	LOS B	10.5	74.3	0.95	0.95	38.8
All Vehicles		2688	1.8	0.795	13.7	LOS B	10.5	74.3	0.71	0.71	42.1

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 17 EV - Conversion

Morphett Street - Challis Street
Master Plan 2031 EV
Signals - Fixed Time   Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Morphett Street (E)											
5	T	6	0.0	0.007	7.2	LOS A	0.1	0.6	0.54	0.36	48.0
6	R	122	0.0	0.490	31.4	LOS C	3.0	20.8	0.97	0.78	32.1
Approach		128	0.0	0.490	30.2	LOS C	3.0	20.8	0.95	0.76	32.7
North: Challis Street											
7	L	185	1.1	0.137	8.5	LOS A	0.6	4.5	0.28	0.66	48.3
9	R	1	0.0	0.002	22.2	LOS C	0.0	0.1	0.73	0.62	37.2
Approach		186	1.1	0.137	8.6	LOS A	0.6	4.5	0.29	0.66	48.2
West: Morphett Street (W)											
10	L	429	2.0	0.402	9.7	LOS A	3.2	22.7	0.42	0.75	47.4
11	T	76	0.0	0.402	1.8	LOS A	3.2	22.7	0.42	0.31	50.8
Approach		505	1.7	0.402	8.5	LOS A	3.2	22.7	0.42	0.68	47.9
All Vehicles		820	1.3	0.490	11.9	LOS B	3.2	22.7	0.47	0.69	44.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P3	Across E approach	53	19.4	LOS B	0.1	0.1	0.88	0.88
P5	Across N approach	53	19.4	LOS B	0.1	0.1	0.88	0.88
All Pedestrians		106	19.4	LOS B			0.88	0.88

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 18 EV - Conversion

Cowper Street - Morphett Street
Master Plan 2031 EV
Signals - Fixed Time   Cycle Time = 70 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Cowper Street (S)											
1	L	15	0.0	0.569	28.9	LOS C	11.3	79.9	0.80	0.93	35.1
2	T	432	1.0	0.569	21.0	LOS C	11.3	79.9	0.80	0.74	36.2
Approach		446	0.9	0.569	21.3	LOS C	11.3	79.9	0.80	0.75	36.1
North: Cowper Street (N)											
8	T	213	2.0	0.183	5.8	LOS A	3.0	21.5	0.45	0.38	49.8
9	R	131	0.0	0.570	41.4	LOS D	4.5	31.4	0.99	0.80	27.9
Approach		343	1.2	0.570	19.4	LOS B	4.5	31.4	0.65	0.54	38.4
West: Morphett Street											
10	L	93	0.0	0.128	11.1	LOS B	1.3	9.3	0.40	0.70	45.8
12	R	36	0.0	0.128	11.5	LOS B	1.3	9.3	0.40	0.75	45.6
Approach		128	0.0	0.128	11.2	LOS B	1.3	9.3	0.40	0.71	45.8
All Vehicles		918	0.9	0.570	19.2	LOS B	11.3	79.9	0.69	0.67	38.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Average Back of Queue Distance	Prop Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P5	Across N approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
P7	Across W approach	53	15.1	LOS B	0.1	0.1	0.66	0.66
All Pedestrians		106	22.2	LOS C			0.79	0.79

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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APPENDIX F COST ESTIMATES

F.1 Short Term Cost Estimates

Item	Unit	Quantity	Rate	Amount
Partially Signalise Intersection				
Detector Loops	Each	4	$700	$2,800
Light columns and fittings	Each	5	$5,500	$27,500
Cabling	Item	1	$15,000	$15,000
Linemarking	Item	1	$3,000	$3,000
Signage	Each	4	$200	$800
Controller	Each	1	$25,000	$25,000
Adjust Intersetion Geometry	Item	1	$37,500	$37,500
Fees to ActewAGL	Item	1	$8,500	$8,500
Pedestrian Crossings (5 locations)				
Pram Ramps (incl demolition of existing kerb)	Each	8	$250	$2,000
Linemarking	m^2	100	$100	$10,000
Signage	Each	16	$200	$3,200
New Path (1.2m wide, 100mm thick reinforced)	m^2	500	$140	$70,000
Widen Existing Path				
Demolish Existing Path	m^2	600	$25	$15,000
Install New Path (2m wide, 100mm thick reinforced)	m^2	1,000	$140	$140,000
Walkway Lighting				
Cable and Conduit	m	65	$40	$2,600
Lighting column (incl fittings)	Each	2	$2,000	$4,000
Ramp regrading				
Demolish existing ramps	Item	2	$10,000	$20,000
Earthworks	Item	2	$10,000	$20,000
Handrail	Item	2	$10,000	$20,000
New Path (1.2m wide, 100mm thick reinforced)	m^2	50	$140	$7,000
			Sub TOTAL	**$433,900**
			Contingency (40%)	$173,560
			GST (10%)	$43,390
			TOTAL	**$650,850**

F.2 Long Term Cost Estimates

Item	Unit	Quantity	Rate	Amount
Signalise Intersection (Antill St / Challis St)				
Detector Loops	Each	6	$700	$4,200
Light columns and fittings	Each	8	$4,000	$32,000
Pedestrian Fittings	Item	1	$5,000	$5,000
Cabling	Item	1	$15,000	$15,000
Linemarking	Item	1	$4,000	$4,000
Signage	Each	8	$200	$1,600
Adjust Intersetion Geometry	Item	1	$45,000	$45,000
Control Box	Each	1	$25,000	$25,000
Fees to ActewAGL	Item	1	$8,500	$8,500
Signalise Intersection (Cape St / Challis St)				
Detector Loops	Each	6	$700	$4,200
Light columns and fittings	Each	10	$4,000	$40,000
Pedestrian Fittings	Item	1	$7,000	$7,000
Cabling	Item	1	$20,000	$20,000
Linemarking	Item	1	$4,000	$4,000
Signage	Each	12	$200	$2,400
Adjust Intersetion Geometry	Item	1	$75,000	$75,000
Control Box	Each	1	$25,000	$25,000
Fees to ActewAGL	Item	1	$8,500	$8,500
Signalise Intersection (Challis St / Morphett St)				
Detector Loops	Each	4	$700	$2,800
Light columns and fittings	Each	6	$4,000	$24,000
Pedestrian Fittings	Item	1	$5,000	$5,000
Cabling	Item	1	$15,000	$15,000
Linemarking	Item	1	$3,000	$3,000
Signage	Each	6	$200	$1,200
Adjust Intersetion Geometry	Item	1	$45,000	$45,000
Control Box	Each	1	$25,000	$25,000
Fees to ActewAGL	Item	1	$8,500	$8,500
Signalise Intersection (Morphett St / Cowper St)				
Detector Loops	Each	4	$700	$2,800
Light columns and fittings	Each	6	$4,000	$24,000
Pedestrian Fittings	Item	1	$5,000	$5,000
Cabling	Item	1	$15,000	$15,000
Linemarking	Item	1	$4,000	$4,000
Signage	Each	6	$200	$1,200
Adjust Intersetion Geometry	Item	1	$52,500	$52,500
Control Box	Each	1	$25,000	$25,000
Fees to ActewAGL	Item	1	$8,500	$8,500

Signalise Intersection (Antill St / Badham St)				
Detector Loops	Each	7	$700	$4,900
Light columns and fittings	Each	8	$4,000	$32,000
Pedestrian Fittings	Item	1	$5,000	$5,000
Cabling	Item	1	$15,000	$15,000
Linemarking	Item	1	$4,000	$4,000
Signage	Each	8	$200	$1,600
Adjust Intersetion Geometry	Item	1	$52,500	$52,500
Control Box	Each	1	$25,000	$25,000
Fees to ActewAGL	Item	1	$8,500	$8,500
			Sub TOTAL	**$742,400**
			Contingency (40%)	$296,960
			GST (10%)	$74,240
			TOTAL	**$1,113,600**